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Educational Research
The English-Speaking Caribbean

Errol L. Miller

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FOREWORD

According to many researchers active in educational questions in Third World countries, educational research may have become a popular idea but not necessarily one for which significant resources are made available. For educators and some policymakers, it is argued, the concept may sound modern and attractive, but it is not one infused by any deep belief. The lack of belief stems from many causes, perhaps the most significant being that such research has not been part of inherited experience in the Caribbean, nor has its efficacy been proved in practice. Educational research, therefore, becomes an early casualty in any struggle for funds for educational activity generally.

Errol Miller in this book argues the case for assigning a higher priority to eductional research than it has enjoyed so far. He is well equipped by training and experience to do so. His training in research came first from the University of the West Indies with further development at a North American university. The experience he gained through his academic activities as a lecturer at the University of the West Indies was subsequently enlarged by experiences in educational administration, both as principal of a teachers' college and as Permanent Secretary in the Ministry of Education in Jamaica. He was thus able to evaluate for himself, in a setting where he exercised responsibility, the role of educational research in forming and helping shape policy.

Overall, the author takes a critical, but optimistic, look at the state of the art in the region, taking note not only of some sound early endeavours but also of the existence of a useful infrastructure. Funding for research will continue to be crucial, he argues, as will be growing independence from external funding and greater reliance on domestic support. This latter will depend, as will the ultimate role to be played by educational research, on the climate for research, which means the set of attitudes and the commitment to using and respecting the fruits of educational research that the region is able to generate.

It is our hope at the International Development Research Centre (IDRC) — and that of the author — that this book will contribute to the creation of such conditions in the territories of the English-speaking Caribbean.

Susanne Hunt
Deputy Director
Social Science Division
IDRC

ACKNOWLEDGMENTS

My first comprehensive, critical look at educational research in the Caribbean came from participating in the work of the Research Review and Advisory Group (RRAG) of the IDRC. As the group tried to inform itself about research and the research process in the Third World, I was forced to assess the state of the art and the stage of development of educational research in the Caribbean and, although I learned a great deal about research in Africa, Asia, and Latin America, I learned the most about the Caribbean, the region that presumably I should know best.

At the beginning of the review-group exercise, Ruth Zagorin, then Director of the Social Sciences Division at IDRC, asked if research had made any difference to education in the Caribbean. While answering with certainty that it had, that question caused me to reflect on why it had made a difference in the instances that I quoted. Robert Myers, then coordinator of the group, encouraged me to do a case study of one such instance to try to arrive at some answers about the processes at work in at least one set of circumstances.

Later, through the influence of Susanne Mowat, who followed Robert Myers as coordinator of the group, I was enlisted to participate in a study of educational research capacity, and later of research environments, to provide information about the Caribbean. Also, I was commissioned by the World Bank to develop an inventory of educational research capability in the English-speaking Caribbean. This was presented to the Bank in August 1981.

This book is an attempt to pull together the insights gained over the last 4 years of active reflection on research in the Caribbean, as well as my experience as an active participant over the previous 15 years.

I wish to thank the persons named previously, all the original members of RRAG, and the current ones for the rich interchange of ideas and information. I also thank my colleagues in the Caribbean who generously supplied information by recounting their personal experiences in interviews as well as by filling out questionnaires, especially Desmond Broomes, Aubrey Phillips, Lawrence Carrington, Dudley Grant, Laurie Reid, Basdeo Beddoe, Belle Tyndall, Ester Burrowes, Cecilline Baird, Jacob Bynoe, Marjorie Davis, Edrick Gift, and Dennis Craig.

In thanking all these colleagues for their contributions made in various ways to this publication, I am in no way trying to share the responsibility for its inevitable weaknesses and short-comings. These are entirely my own.

GENESIS AND EVOLUTION OF EDUCATIONAL RESEARCH IN THE CARIBBEAN

The institutionalization of educational research in the English-speaking Caribbean has a very short history. All the efforts and attempts to achieve institutionalization have taken place within the last 30 years and mostly in the 1960s and 1970s. In a real sense, research is still a new phenomenon, generally perceived as a luxury and still treated in many respects as a novelty.

Research institutions have been created in three distinctly different settings -- universities, ministries of government, and private enterprise -- and this is also the chronological order of their establishment.

There are two universities in the English-speaking Caribbean. The University of the West Indies (UWI) was the first to be established with the University of Guyana following later when Guyana withdrew from being one of the contributing governments of the University of the West Indies.

The university is a community of scholars and research is part of that tradition. The expectation is that the teachers within the university will not only transmit knowledge but also inquire into its nature and depths, extend its boundaries, and expand understanding. Accordingly, the university is granted some autonomy that allows it to be somewhat removed from the real world. This, of course, is the classic European and British conception of the university. If the more pragmatic and utilitarian view is taken, then the university's commitment is to be involved in survival struggles of the community through creation of new ideas and strategies pioneered through research. Whatever the conception, research and the university are synonymous. Accordingly, as the Caribbean has attempted to establish universities, it has also established a research tradition that includes educational research.

Government ministries are the creation of the political march to national sovereignty and political independence. During the colonial era, the various Caribbean colonies were governed by departments headed by directors from the Colonial Office of the British Civil Service. Their source of authority and information did not arise from within the colony but from the mother country. Research was not needed in the colonies. As departments evolved into ministries, they were mandated to perform functions and to provide services of much greater scope and complexity than in the past. Increasingly, these activities have encompassed educational research. Accordingly, government ministries have provided institutional frameworks within which research has been pursued as a primary or secondary activity.

Educational research has but a small foothold in private enterprise at present. However, private institutions do exist, although this is a recent development.

THE UNIVERSITY OF THE WEST INDIES

Educational research became established in the English-speaking Caribbean as a direct result of the establishment of the University of the West Indies. The university began as the University College of the West Indies, affiliated to the University of London with its teaching facilities at Mona in Kingston, Jamaica. The courses taught and the degrees granted were those of the University of London in England. Its mandate was to create the leadership that would be needed by the emerging Caribbean nations as they moved to political sovereignty through a federation (Mordecai 1968; Lowenthal and Comitas 1973). (The West Indies Federation was established in 1958 and became defunct in 1961 with the withdrawal of Jamaica.)

Persons appointed to the University College had to satisfy criteria designed to ensure that they could both teach a particular academic discipline as well as pursue research in that area. To foster and promote inquiry, a Research and Publications Fund was established to which members of staff could apply for grants to support their research activities. Promotion criteria gave preeminence to research and publications. The promotions policy of the University College was borrowed from the publish-or-perish approach widely practiced in Europe.

The Department of Education

The University College of the West Indies was established as a regional institution in 1948 by the British Government and the 14 English-speaking colonies in the Caribbean. In 1948, it began with the Medical Faculty. This was quickly followed by the establishment of the Faculties of Arts and Natural Sciences and, in 1952, the Department of Education was added. This department's primary responsibility was to provide initial professional training -- through a 1-year Diploma in Education course -- for graduates intending to teach in high schools. Although the rest of the university was offering London degrees, the London-based syllabuses and examinations for the postgraduate Certificate of Education were found to be inappropriate for the local situation, because of the unique needs of local schools. Thus, from the beginning, the Department of Education of the University College of the West Indies offered its own diploma (Walters 1974: 1-3). This became the first qualification of the university that was totally indigenous.

Because the Department of Education did not admit its first students until October 1953, it had a period of 1 year in which to establish the program it was to offer. During this time, Professor D'Aeth, the first head of the education department, visited all the territories supporting the University College. This gave him the opportunity to inform the territories of the new program as well as to discover their interests and needs. He found that the territories were not only interested in sending high-school teachers to be trained but also sought assistance for preparation of primary teachers, curriculum development for all levels of the school system, resolution of problems related to the teaching of reading, and upgrading education in rural schools. Professor D'Aeth, therefore, proposed that, in addition to the Diploma in Education course, the department should establish a centre for the study of education whose functions would be to conduct research into local problems, collect data related to the school systems, act as a clearing house for the dissemination of educational information, and offer consultation to the various governments.

In 1954, the department obtained funding for 4 years from the Carnegie Corporation to establish a centre for the study of education. In addition to holding several important conferences of educators from the secondary and tertiary levels and offering consultation to governments on various educational problems, the centre launched research projects in the teaching of reading, educational testing and measurement, and curriculum development in West Indian history.

Personnel for these research projects were temporary research fellows on sabbatical leave from universities in Britain or, in one or two instances, highly qualified West Indians who were employed in various Ministries of Education. The research projects were funded from the Carnegie grant. At the end of the grant, in 1959, the centre was fully integrated in the Department of Education. Several of the persons who had been employed at the centre were absorbed into the permanent staff structure of the department.

Like their colleagues in the rest of the university, the staff of the department were required to do research and to publish their results. The research that staff members pursued was left entirely to their individual interests and competence. There was little or no institutional provision to assist them in any tangible way with their research projects because most of the grants made from the Research and Publications Fund of the university went to members in the Faculties of Medicine and Natural Sciences. Research undertaken by the staff was largely what could be managed out of their own resources.

By the end of the first decade of its existence, through the work of the Centre for Study in Education funded from the Carnegie grant and the individual work of staff members of the department, educational research had become firmly established in the university and in the English-speaking Caribbean. The lines of research that had been established were history of education, language research involving linguistics and teaching of reading, educational testing and measurement, and curriculum development.

Because of the location of the university in Jamaica, all of the research projects that had been carried out were pursued within the context of the Jamaican educational system. For curriculum development in West Indian history, however, attempts had been made to involve educators in the rest of the Caribbean.

In addition to establishing lines of research, the department had functioned as a mechanism that, for the first time, had assembled a nucleus of practicing educational researchers on Caribbean soil. For the most part, the personnel involved were mainly expatriate and almost totally British. An encouraging sign was that an increasing number of West Indians who had been educated in Britain were taking up appointments in the department.

In its second decade of existence, 1962-72, the Department of Education underwent significant growth and changes and five programs were added: Bachelor of Education for graduates of teachers' colleges with 3-years teaching experience; Higher Diploma in Education, which served as the first year of the Master of Arts in Education; Master of Arts in Education; Doctorate (Ph.D.) in Education; and a 1-year Certificate in Education for primary-school teachers who were graduates of teachers' colleges.

The higher-degrees program was designed to produce high-level administrators for the educational system, educational researchers, teacher educators, and staff for the university itself. By 1972, graduates of the department had successfully completed all of the above programs.

Although the staff of the department had grown as the number of students and courses had multiplied, it had also become increasingly West Indianized. By 1972, both the Institute and department were almost completely staffed by West Indians. In addition, a significant number of these staff members had published the results of their research and this began to attract international attention and recognition.

The Institute of Education

The institutionalization of educational research received a further boost with the establishment of the Institute of Education in 1962. The Centre for Study in Education, which operated between 1954 and 1959, established the need for such an entity. Requests for consultation and assistance with teacher education continued to come into the department after it had absorbed the centre. However, the funds available in the department were insufficient to meet the requests. After much consultation between the university and the various territorial governments, it was decided to establish an institute of education.

Elsa Walters (1974: 2) points out that, after the McNair Report on the training of teachers and youth leaders, the Education Act of 1944 in Great Britain gave official sanction to the establishment of institutes of education within universities:

> An Institute of Education was a body responsible for developing a coherent system of teacher training for all the teacher-training colleges within its area. Responsibility was shared between the constituent parts of this body, that is, the university and the training colleges with representatives of the ministry and local educational authorities. Its function was the approving of syllabuses, the organisation of examinations, research in the educational problems, and information and advice at all levels. It worked through committees, conferences and boards of studies, so there was ample opportunity for discussion and exchange of ideas -- colleges no longer worked in isolation, universities gained contact with the practical aspects of their studies, standards were gradually raised, and the institutes became the growing points of educational development.

Following requests from governments and recommendations from various conferences and committees, a conference was convened at Mona in March 1961. Delegates included representatives from the governments supporting the University of the West Indies and observers from the West Indian Federal Government, the Colonial Office, the Government of Canada, the University of London, and the Ford

Foundation. At the end of the 3-day conference, the delegates agreed to recommend that an institute of education should be created in accordance with the following principles (Walters 1974: 37-38).

> 1. The Institute of Education is an association of the University College of the West Indies, the Federal Government of the West Indies, the Governments of Honduras, the British Virgin Islands, and the Unit Territories of the Federation, the training colleges and the teaching profession.
> 2. The general function is to promote the training of teachers in the West Indies, British Honduras and the British Virgin Islands.
> 3. The Institute shall continuously survey and report on teacher training needs.
> 4. The Institute shall undertake and promote research into educational problems.
>
> The Institute, working with the governments and the government-recognised training colleges, shall be the authority for maintaining standards in the training of teachers including approving the syllabuses of training colleges and the appointment of examiners. It shall exercise this authority through the appointment of representative boards.

In the establishment of an institute of education, the university was borrowing wholesale a concept that had been developed and implemented in England. The financial arrangements for the Institute were that, beginning in 1963, the Ford Foundation would provide an operating grant that would diminish and come to an end in 5 years. As the grant from the foundation diminished, increasing contributions would be made by the governments supporting the university so that, at the end of the 5-year period, the supporting governments would bear the full cost of its operations, provided that the Institute had demonstrated its ability to serve the various territories. The funding from the Ford Foundation covered both core and project funding.

The establishment of the Institute was of significance to educational research in two important respects:

. The Institute established educational research regionally. The headquarters were at Mona but the Institute had branches in Barbados and Trinidad. This, in fact, predated the establishment of the university campuses in these territories. With the establishment of branches of the Institute in Barbados and Trinidad, educational research became institutionalized regionally.

. The Institute became an institutional mechanism that attracted project funding for educational research activities. The Institute had funding for research projects through the Ford Foundation and it was also a structure that could be used by other funding agencies in stimulating and promoting research projects of various types in the region. Although, in the beginning, the Institute had not yet acquired adequate staffing to pursue educational research, it had the funding to do so. In the first instance, therefore, it drew heavily on the members of staff of the department, who had training in research but little funding to carry out research projects. In cooperation, two important needs were satisfied.

By 1972, the Institute of Education had undertaken projects in educational research in each of the Caribbean territories in which it was located:

Barbados and Windward and Leeward Islands

. The UWI-CEDO/Unesco Caribbean mathematics project for junior secondary schools

. Models for collecting educational statistics applicable in the Eastern Caribbean

. A survey on mathematics achievement in schools in the Eastern Caribbean

. Mathematics curriculum for teachers' colleges

. The St Lucia mathematics project

. The CEDO/UWI Caribbean science project

Jamaica

. Ministry of Education/Institute of Education mathematics education project

. Project for early-childhood education

. Children's language project

. Social-studies curriculum for teachers' colleges

. Research into reading achievement in the primary school

. Language-arts curriculum for teachers' colleges

. Research in the development of thinking among Jamaican children

Trinidad

. West Indies science curriculum improvement project (WISCIP)

. Primary school organization in Trinidad and Grenada

. An investigation of English-language learning and teaching problems in Trinidad and Tobago

. Social-studies project

Regional Project

. The Unesco/UWI regional project in teacher education and curriculum development for the first three grades of secondary in areas of language arts, mathematics, and science

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It can be seen from this list that, in addition to receiving core funding in the first 5 years of its existence, the Institute was able to attract project funding from a number of funding agencies. These included the Centre for Educational Development Overseas (CEDO) of the Ministry of Overseas Development in Great Britain, the United Nations Educational, Scientific and Cultural Organization (Unesco), the Carnegie Corporation, and the Bernard Van Leer and Ford foundations, as well as governments in the region, including St Lucia, Trinidad and Tobago, Jamaica, and several governments in the Windward and Leeward Islands. It can also be seen that the projects were mainly related to research in curriculum development. This was consistent with the shift in the Caribbean region away from curriculum determined by syllabuses in Great Britain toward curriculum that was determined more by the environment and the culture of the Caribbean.

What the Institute of Education had succeeded in doing was to institutionalize a relationship between educational research and the developmental concerns of the region. The two major concerns at that time, as reflected in these projects, related to learning efficiency, especially in the areas of reading and mathematics, and curriculum development. This posture of research as it is related to development is to be contrasted with the more academic type of research based on individual interest and professional advancement that had been institutionalized in the Department of Education in the classic tradition of European universities.

The School of Education

In 1962, the University College of the West Indies was granted its own charter to award diplomas, certificates, and degrees. At that time, the elevation to the status of a full-fledged university made no difference to the structure of the Faculty of Education, which was composed of the department and the institute. By 1972, however, the need to transform those structures was felt and the School of Education replaced the Faculty of Education (Walters 1974: 42-44).

The school was structured on the basis of two major considerations: functional operation and campuses. On the basis of functional operation, three sections were established: teaching, research, and teacher education development. With respect to campuses, the school was to operate on all three campuses of the university: Mona, Cave Hill, and St Augustine.

The branch at Mona had all three sections. The Teaching Section was responsible for instruction in all the university courses that had been offered in the department -- it could be said that the Department of the Faculty of Education had become transformed into the Teaching Section of the School. The Institute of Education gave rise to two entities, the Teacher Education Development Section and the Research and Development Section. The former dealt with the traditional concerns of the establishment of syllabuses, the organization of examinations, and curriculum development of teachers' colleges whereas the latter dealt with the research and developmental issues and concerns confronting governments and institutions.

At St Augustine and Cave Hill, the branches had only one section each, Research and Development. At St Augustine, the Institute of Education had never undertaken any substantial responsibility in teacher education. To be renamed the Research and Development Section meant no change of function because that branch had always engaged in research and development activities.

At Cave Hill, the change of name also meant no change of function because the Institute at Cave Hill had performed both teacher education and research and development functions. The logic of the situation would have been to create two sections at Cave Hill -- Teacher Education Development Section and Research and Development Section -- but this was not done. It is not unfair to say that the reorganization of the Faculty of Education into a School of Education had greater significance for Mona than it did for either Cave Hill or St Augustine. On paper, however, research and development received much greater significance and weight than it had had before because it was now elevated to one of the substantive functions of the University of the West Indies in performing its role in the area of education.

THE UNIVERSITY OF GUYANA

Guyana was one of the contributing governments to the University College of the West Indies. Soon after the elevation of the

University College of the West Indies to full university status, however, Guyana seceded from the University of the West Indies and established its own university -- the University of Guyana.

In 1966, the University of Guyana established a Faculty of Education. Its initial program was postgraduate professional training for secondary-school teachers through an in-service Diploma of Education. Thus, the Faculty of Education of the University of Guyana began in a very similar fashion in the 1960s to the way in which the University College of the West Indies had begun in the 1950s. This was not mere coincidence because one of the founding members of the Department of Education, Professor Shirley Gordon, had recently left the University of the West Indies and joined the University of Guyana as head of the Faculty of Education.

Mainly through her efforts, the Carnegie Foundation decided to assist the young Faculty of Education with a grant of US$158,000 for the period 1968-71. This grant was to be used for educational development with the projects to be developed in consultation with officers of the Ministry of Education, the staff of teachers' colleges, the Guyana Teachers' Association, and with other members of the staff of the University of Guyana (see Miller 1979: 110-112). The priority areas agreed on were problems in language and communication, quality of response in the teaching of selected primary classes, and quality of response and pupil's attitude in selected aspects of secondary education.

The major intention was to alleviate those factors in education that stood between written syllabuses of modern education and their effective general introduction into classrooms in Guyana. The three-stage strategy adopted was to: use an empirical approach to reach working definitions and descriptions of each problem; design, in cooperation with practicing teachers, methods and support materials to solve these problems; and evaluate all features of the program progressively as they emerged in the project.

The structural mechanism that was established to execute these projects was called the Carnegie Research Unit. It was established as a branch of the Faculty of Education in the academic year 1968-69. The staff of this unit consisted of three research fellows, all with master's degrees and some experience in educational research, one statistician, three research assistants, and an appropriate number of secretarial and clerical personnel. The unit was suitably equipped to allow for the production of materials as well as for in-house analysis of data. The personnel of the unit were paid directly by the Carnegie Corporation and had no teaching responsibilities in the faculty.

At the end of the second year of the grant, the future of the unit was considered -- both its existence and its form. The following case (Miller 1979: 113-117) was advanced on behalf of the unit by its head, Mr Bent:

. The procedure adopted by the unit was to arrive by research methods at an accurate description of the selected problems, then to design, test, and evaluate methods of dealing with these difficulties.

. From the beginning, the purpose was to identify factors in general education that were obstacles to effective production of new curricula and syllabuses in schools.

. Work had been done by the unit to describe these obstacles and the results of the investigations so far had shown that the educational system was beset by curriculum problems of great magnitude.

. If significant changes were to be made on an informed basis, a great deal of basic as well as applied research had to be done. Basic research was necessary because, like most developing countries, very little psychological and sociological data about Guyanese children existed by which the thinking of educators could be informed.

. The present project, that is grant one, could not accomplish all these various tasks in 3 years.

. Applied research had to be undertaken in the secondary sector. For example, empirical evidence revealed that immediate action was needed in such areas as English, social studies, science, and mathematics but only in mathematics had a pilot study been possible and then only at the third level. In the primary sector, research activity so far had been operational only in the area of language development at the kindergarten and standard one level of primary education. It should be obvious, therefore, that action remained to be taken in large and important areas of the schools' curriculum at both the primary and secondary levels.

. In most of the territories comprising the Commonwealth Caribbean, there was activity in the sphere of curriculum development and Ministries of Education were taking a serious look at curriculum. These ministries were looking to the two universities of the region to provide empirical and experimental data to assist them in decision-making. The Institute of Education of the University of the West Indies, at that time, performed that function relative to those territories. The Carnegie Research Unit, if converted into a curriculum unit within the Faculty of Education of the University of Guyana, could through pilot and full-scale projects inform the thinking of the local Ministry of Education. Also, in collaboration with the Institute of Education of the University of the West Indies, it could share its findings and expertise with other Commonwealth Caribbean territories and thus prevent duplication.

. A curriculum development unit of the Faculty of Education could significantly improve both the standard of teaching at the University of Guyana as well as the level of consciousness and expertise of teachers in the system in relation to curriculum matters.

. During the 2 years of operation, specialized skills were being developed in the research unit. These skills were now present in the research assistants who had worked in the unit and, if the unit were disbanded, those skills would be lost and probably not be regained. Even if, at a later date, a research unit was reestablished, the same loss would be true for the insights gained by methodological problems that became apparent when experimental work was done under actual classroom conditions.

The issues related to the continuation of the research unit were not resolved by the end of the grant period in 1971. The Carnegie Corporation, therefore, extended the project for 1 year. During this year, the following decisions were taken:

. That the Carnegie Research Unit would continue but be transformed into a research and curriculum-development unit;

. That it would become part of the Faculty of Education and would become engaged in teaching;

. That some basic research should continue; and

. That the Carnegie Foundation would continue to fund the project for a further 3 years after which it would be fully funded by the University of Guyana.

In 1972, therefore, the Carnegie Foundation made a further grant of US$170,000 for the 3-year period 1972-75. The posts in the research unit became part of the establishment of the University of Guyana but the university made only a token payment to each person of US$1, the rest of their salary coming from the funds of the foundation. At the same time as the transition from being totally research-oriented to being involved in research and curriculum development, there were several staff changes. In the recruitment of staff to the transformed unit, there was a change in policy so that persons selected to pursue curriculum-development work were not required to have research experience or training. Consequently, individuals were employed who had degrees plus professional training as teachers with some experience in curriculum-development activities but no significant experience or training in research.

By the end of the second grant period, in the middle of 1976, several research reports had been submitted:

- The preoccupation of a sample of adolescents receiving secondary education in Guyana
- Statistical analysis of factors in the formal work structure of secondary education in Guyana
- The language of kindergarten and primary standard one children in Guyana
- Teaching of English in Guyana: A linguistic approach
- The place of English in Guyana
- Response of a sample of Guyanese students to mathematics as a subject of the secondary-school curriculum
- The attitude of Guyanese students to their schooling at the secondary level
- Investigation into the occupational mobility of secondary-school teachers in Georgetown

In addition to these reports, curriculum-development projects for community, high, and multi-lateral schools had been launched in the areas of English, mathematics, and science. These projects had produced reports, manuals, and curriculum materials of various kinds.

At the beginning of the academic year 1976-77, the Research and Curriculum Development Unit became fully a part of the Faculty of Education and totally funded by the University of Guyana. Two additional posts were added -- in social studies and in the psychology of human development -- but they remained unfilled for some time because of the inability to find suitable applicants. Simultaneously with becoming a formal and integral part of the Faculty of Education, the Research and Curriculum Development Unit was assigned the responsibility for teaching the master's degree in education program that was being launched in conjunction with the Ministry of Education. The master's program came to an end in 1978 and was not repeated. In 1979, the faculty was reorganized into five departments and the Research and Development Unit was renamed the Research and Development Department.

As in the case of the Department of Education and subsequently the Teaching and Teacher Education Development Sections of the School of Education of the University of the West Indies, members of the teaching departments of the University of Guyana were expected to carry out research. To this end, a Research and Publications Fund was established in the university with specific faculty grants of about US$20,000. Staff members can apply for such grants to assist them with research projects. The research undertaken by members of these departments is usually limited by their other responsibilities as well as by the modest funding available. Research done in this way tends to be purely academic and to be limited to the interests and competence of the particular staff member.

SIMILARITY OF DEVELOPMENT

The institutionalization of educational research in faculties of education of the Universities of the West Indies and Guyana has followed similar lines. Both universities were established by governmental decree; they included research as part of the essence of the university tradition; and the universities required research by the staff members but provided little in the way of tangible support for such activities.

With respect to research and development concerns, both universities were assisted by international foundations in the creation of structures that would enable the developmental issues to be addressed through research. For the University of the West Indies, the Ford Foundation provided the core and project funding for the establishment of the Institute of Education and, for the University of Guyana, the Carnegie Foundation provided the core and project funding for the establishment of the research unit. In both instances, the governments concerned accepted the structures that were established as a result of grants from these foundations and retained the integrity of the units so that permanent structures have been established. In both instances, after the period of grant funding, the original structures were reorganized but the research and development function was kept intact in the reorganized structure. The major difference between the universities in this regard is that the University of Guyana has not been able to attract project funding.

EDUCATIONAL RESEARCH IN OTHER FACULTIES

Institutional capacity to carry out educational research does not reside entirely within the faculties of education of the two universities. Capabilities have been developed within the Faculties of Medicine and Social Sciences. (Because the University of Guyana has no Faculty of Medicine, the statements about medicine do not apply there.) Within the Faculty of Medicine of the University of the West Indies, three units have consistently carried out research related to education. The Tropical Metabolism Research Unit has been conducting research related to nutrition and its effect on schooling and learning. The Department of Social and Preventive Medicine has been engaged in research related to the heights and weights of school children as well as the onset of puberty and its impact on schooling. The Medical Council Research Unit has also been involved in heights and weights studies as well as the educational implications of sickle-cell anaemia with respect to both attendance and learning efficiency.

The research related to education that is carried out in these units is a function of two factors: an overlap or coincidence of concern between medicine and education; and the motivation, interests, and concern of particular individuals.

There is nothing structural that requires these medical researchers to pursue phenomena related to education and, if they were not involved, such work would probably cease. At the same time, the research they are pursuing represents an interface between education and medical concerns. In Barbados, the National Nutrition Centre, which is pursuing activities in community medicine, especially as these relate to malnutrition, has also carried out similar work, mainly because of the particular interests of the medical researchers concerned. Despite the lack of structural permanence, however, such activities should be considered as part of the university's achievement in fostering and promoting educational research.

In the area of social sciences, the Institute of Social and Economic Research (ISER) of the University of the West Indies and the Institute of Development Studies (IDS) of the University of Guyana have, from time to time, been engaged in research involving educational issues and questions. Topics that have been pursued by these institutes include:

- Educational output from schools as these relate to the manpower needs of Caribbean economics;
- Brain drain to North America from the Caribbean region;
- Education as it relates to social mobility and social stratification; and
- Education of women in the Caribbean.

As in the case of medicine, the capability to do educational research that has been institutionalized here represents a coincidence of concern as well as the personal commitments of particular individuals: no structural reasons dictate that social scientists should pursue research in education.

TERTIARY INSTITUTIONS

Inspired by the universities' tradition of research and in response to felt needs, several tertiary institutions have attempted to incorporate educational research as a formal part of their operations. To date, there have been two successful attempts, the College of the Bahamas and Mico College in Jamaica.

The Bahamas is one of the noncampus territories supporting the University of the West Indies. In 1975, the Government of the Bahamas decided to reorganize the teacher-training colleges and sixth forms into the College of the Bahamas offering an Associate Degree. In addition, through collaboration with the University of the West Indies, agreement has been reached that will allow the College of the Bahamas to teach for university degrees in the areas of arts and general studies and education. The college now has over 1500 students and 128 members of staff, many of whom have second and third degrees that include training in research. The college has established a Research and Publications Fund from which staff members can receive grants for research. In addition, it has adopted the policy of making time concessions to staff members during any semester in which they are involved in research. Most of the work done to date has been concentrated on Bahamian history and culture. Through the College of the Bahamas, educational research has been accorded a structural and institutional base within the Bahamas.

The first attempt by Mico College to establish a research capability occurred in the mid-1960s with the establishment of a Mico Research Council. This move came in the wake of rapid expansion in teacher education as well as a shortening of the period of teacher training. These twin factors led to a deterioration in the quality of teachers produced and occasioned a crisis in teacher education. The council attempted to address such problems. Although it produced a few papers in house, it was not able to sustain this effort because of limited resources and its inability to attract adequate funding.

The second attempt has come with the establishment of its Child Assessment and Research in Education (CARE) Centre. This centre offers diagnosis and therapy to children suffering from various disabilities with particular emphasis on multiple-handicapped children. It provides a community service by being a referral agency to which various associations for handicapped children, having screened them, can refer the child if they are able to detect some serious problems. This centre provides clinical training for personnel being prepared for the field of special education in the Special Education Department of the college. Educational research has been formally included in the mandate for the centre and is reflected in the physical facilities provided, the recruitment of staff, and the tasks they are expected to undertake. The centre opened with services to children in April 1981. It is in the process of organizing its first research project. Because the University of the West Indies is without special-education capability, special affiliation is being worked out between Mico College and the School of Education under which University of the West Indies courses in special education will be developed and offered at Mico College.

MINISTRY-BASED RESEARCH

Outside the universities, government ministries -- especially the Ministries of Education -- constitute the most important institutional base for educational research in the English-speaking Caribbean. In the main, educational research is institutionalized indirectly as an ancillary activity. In two instances, however, research has been institutionalized directly by the establishment of structural entities designed to carry out only educational research. Because these two situations have different characteristics, it is necessary to describe and discuss them separately.

Research as an Ancillary Activity

Ministries of Education in the Caribbean vary considerably in size and organization. However, they share certain common features.

In the process of evolving, several different structural entities have been created to perform various functions or provide various services. These structural entities are designated differently in different countries and may be called divisions, departments, units, or sections. Because these terms are not consistently used across the Caribbean, I shall refer to all of them as structural entities. It is possible to identify seven such entities in which research has become an ancillary or supporting activity: planning, curriculum, measurement and evaluation, test development, school welfare, school psychological services, and special education.

In some of the larger countries, for example, Trinidad and Jamaica, educational research is carried out in ministries other than education. Special education is sometimes the responsibility of the Ministry of Social Security. In addition, Ministries of Health in some territories have created structural entities that deal with nutrition, community health, and child psychiatry and sometimes carry out educational research.

Taking the total array of institutional elements, mainly located in Ministries of Education but sometimes located elsewhere, several generalizations can be made. The primary purpose of these structural entities is not to carry out educational research. In the execution of their main functions, however, research is carried out as an important ancillary activity, sometimes in support of that function, for example in planning. Planning for the educational enterprise requires the collection of data and the analysis and interpretation of these data can result in important inferences about the educational process. Similarly, in curriculum development, research often provides base-line information needed to start the process and often provides feedback so that the curriculum being developed can be revised in the light of actual field experience. In both instances, research is carried out. It provides meaningful information and serves a very useful purpose. It requires personnel with certain training and it adds to the store of knowledge.

Another way in which educational research is indirectly institutionalized is as a by-product of a service performed by a particular structural entity. Examples can be found in any of the following: measurement and evaluation, test development, school social-welfare service, child psychiatric clinic, or school psychological services. Through these services, the educational achievements of children are measured, problems experienced by them in the school system are identified, and the effectiveness of different programs are evaluated. If these services are offered in a systematic way, the data that are stored, retrieved, and analyzed can add to the store of knowledge about the system. Although the service is not being offered for research purposes, research becomes a by-product of the operation. Usually it is persons who are motivated and have a research interest who take the time to follow up with analysis of their operations. Such critical analyses often generate new knowledge about the system.

From this point of view, every Ministry of Education in the English-speaking Caribbean is involved in educational research, the major areas being curriculum development and planning. In some of the very small territories, this may revolve on the activities of a single officer; consequently research is carried out on a small scale, yet some research is done. Often it is not recognized as such, the data and information are not disseminated, and the knowledge gained is confined within the circumstances in which it was generated.

Research Units

Research units with the sole responsibility to carry out educational research have been created in two ministries in the region, Jamaica and Guyana. It is instructive to look at the circumstances in which these units were established.

Research Unit, Ministry of Education, Guyana

The Research Unit of the Ministry of Education was established in September 1976. The establishment of this unit, along with the training of researchers, was part of an overall program to strengthen the capacity of the Ministry of Education to perform its several functions.

To fully understand why the unit was established, it is necessary to understand the background against which this decision was made. In the late 1960s and early 1970s, rapid educational changes had been made. These could be listed as:

. Expansion of the secondary system, including the introduction of community and multilateral high schools;

. Expansion, reorientation, and reorganization of the teacher-training program;

. Massive curriculum development both at the primary and secondary levels;

. Development of a national dialogue seeking to define the goals of education and the values that should be developed through education to support the ideological posture of the country as being a corporative socialist republic; and

. Free nursery, primary, secondary, and university education.

The Minister of Education chiefly responsible for these developments, who was formerly a research fellow of the Faculty of Education, stated that she found the need for the development of a research unit for the following reasons (Walters 1974: 42-44):

. For making decisions because objective information based on solid empirical data could inform policy decisions;

. To provide data for curriculum development, test development, and teacher-education activities that were in progress;

. For quality control -- because so many rapid developments were taking place in the education sector, well designed research and critical interpretation of results were needed to ensure that various programs were achieving their objectives and were in fact designed for the needs for which they had been identified; and

. To persuade cabinet members that money for education was being well spent because of the great emphasis that had been placed on education and the proportion of the national budget that was directed to it.

The Research Unit was established as the prerogative of the ministry itself, but did not have the official sanction of the Ministry of the Public Service or of the Ministry of Finance. Using its authority to place teachers where it wished, and with the tacit approval of the Teachers' Services Commission, the Ministry of Education brought together into a single building teachers who had been trained and had experience in educational research. They were designated the Research Unit. Because the unit did not have the formal approval of the Ministry of the Public Service, it did not appear officially on the organizational chart of the ministry. The way in which this unit was established indicates the urgency that was placed on its formation by the minister. Although the ministry has been seeking recognition for the unit within the Civil Service, this problem had not been resolved by September 1981.

Research Unit, Jamaica

In February 1972, there was a change of government in Jamaica. The new government established education as one of its top priorities and immediately undertook a sector survey in education with the help of several international agencies.

This survey identified the major problems in the educational system and also the major constraints to educational development in Jamaica. Among the large number of problems and constraints identified was the need for educational research that would give insight into the exact nature of the various problems and offer suggestions about possible solutions that were likely to work within the Jamaican situation. On the basis of the results of the survey in 1973-75, the Ministry of Education, with the strong support of the Prime Minister, announced and implemented a number of far-reaching educational changes:

. Free secondary and university education;
. A Common Entrance (CE) examination determining access to high school solely on merit;
. Introduction of a national youth service for high-school leavers and university graduates;
. An in-service teacher education thrust to remove, over a 4-year period, the backlog of untrained teachers in the primary schools of Jamaica;
. A curriculum development thrust designed to recast the curriculum for Grades 1-9 in the public educational system;
. Introduction of a technical vocational unit to promote the development of technical and vocational education in the educational system with particular reference to agricultural education;
. Conversion of junior secondary schools from 3-year institutions to 5-year institutions by adding Grades 10 and 11;
. Introduction of a shift system in the new secondary schools and also primary schools to alleviate the problem of overcrowding in the school system;
. Significant assistance to early-childhood education in the form of salary subsidies for basic-school teachers and grants for nutrition and class materials;
. Expansion of the educational system by building new primary and secondary schools and also the building of new teachers' colleges along with the expansion of the existing ones; and
. The significant increase of the education budget from $32 million in 1972 to $162 million in 1975-76.

These changes would mean that the Ministry of Education had the largest budget and, in fact, was spending 25% of total government revenue earned through taxation. To accommodate and manage these new developments, the Ministry of Education itself had to undergo significant reorganization. The Ministry at that stage had five divisions each headed by a director: Personnel and Management Services; School Services, dealing with the terms and conditions of employment of teachers and all matters of school administration; Building; Finance; and Education, consisting of all the technical officers and headed by the Chief Education Officer.

The reorganization took place in 1975 and added two divisions: Projects, and Education Planning and Development.

The Education Planning and Development Division was created by splitting the old Education Division into two. An Operational Division, headed by the Chief Education Officer, consisted of four units: Early Childhood and Special Education; Primary Education; Secondary Education; and Tertiary Education.

The other part of the old Education Division became the Planning and Development Division, which dealt with the qualitative side of the educational system. It consisted of five units: Planning; Core Curriculum; Technical-Vocational Curriculum; Publications and Multimedia; and Research and Evaluation and Guidance.

Each unit in the Planning and Development Division was headed by an Assistant Chief Education Officer. The director of the division was designated Chief Education Planner and had the same status as the Chief Education Officer.

The Research and Evaluation and Guidance Unit came into being in July 1975. It was established with five posts for researchers and a recruitment policy that was to obtain persons who had at least a master's degree in education with training in research and some experience. At the time of the establishment, all posts were filled. The unit was made up of three sections: Guidance; Student Achievement; and Research.

The mandate of the Research Section was:

- To assist in the development of various projects and programs within the Ministry of Education so that their objectives and strategies were so formulated that they could be evaluated eventually;
- To assist in the development of various programs and projects by providing base-line data relevant to the exercise;
- To critically assess various projects and programs in the light of the objectives to ensure that they were achieving their targets; and
- To examine the wider problems of the educational system by conducting experiments, surveys, investigations, and pilot projects that would indicate promising new approaches, new directions, and possible solutions to some of the more intractable problems within the educational system.

Although the section would work in conjunction with the other units of the division, it was created as a separate entity because the critical assessment that it would need to do would sometimes conflict with the enthusiasm and optimism of planners, curriculum developers, and media specialists.

Comparison of the Research Units in Guyana and Jamaica

There are several similarities between the two units. They were established to perform the following functions:

- Assist in decision-making by providing an empirical data base;
- Justify increasing expenditure on education;
- Provide quality control, where this is understood to include both formative and summative evaluation; and
- Carry out problem-solving, especially where it is related to some of the more intractable problems within the educational systems of both countries.

Certain elements of the conditions that existed in both countries are also similar. In both instances, research units were established during a period of rapid educational changes and developments; far-reaching structural changes had been proposed and were being implemented; and education was being built as the flagship of the armada of national reconstruction. In each instance, one of the top administrators involved in the process of change had been recruited from university-based research.

This is not to suggest that either of these two are sufficient conditions or that wherever they occur together the resultant action will be the establishment of such a research unit. For example, similar rapid educational changes have taken place in Barbados, however, there has been no move to establish a research unit there. Again, a university-based researcher has been recruited into a top administrative position in the Ministry of Education in Trinidad and Tobago without any similar move to establish a research unit. In the example quoted, I am simply observing that where research units were established in the Caribbean these two factors were present. There may be other factors, such as a climate for research as reflected in the willingness to accept research results as the basis for decision-making, that may be of greater importance than rapid educational changes or trained researchers placed in influential policymaking positions.

Issues Related to Ministry-Based Research

Whether educational research in a Ministry of Education is produced as an ancillary activity consequent upon some service or function or it is pursued as a substantive activity in itself, several factors could have the effect of circumscribing and rendering ineffective the work that is done. The most important of these factors are confidentiality and political interference.

Confidentiality

The Civil Service in every Caribbean territory has an Official Secrets Act binding the civil servant to respect certain confidentiality barriers that may be imposed from time to time. The ministry-based researcher is not exempted from this act. For different reasons and at different times and in various places, ministries may decide that certain information obtained from research, or an inference made from that information, is best not publicized because of the nature of that fact or inference, relative to some policy position taken by the ministry or some desire to hold that matter in confidence. This immediately places major constraints on the dissemination of such information to the wider research community.

This position is to be contrasted with that of university-based research. Autonomy and freedom of inquiry and expression require the university researcher only to pay attention to the rules of objectivity and the scientific procedures that have been established for the particular discipline before disseminating the results.

Political Interference

Political interference is defined here as the introduction into the research process of considerations that are basically of a political nature, which distort or disturb the normal flow of that process.

This can happen in a number of ways. These include the prevention of research into topics or areas that are deemed to be too sensitive or, conversely, pressure to study topics that are perceived as being trivial but which are highly salient at a particular time because of certain political events.

This interference may occur directly with members of the political directorate personally intervening in research taking place in the Ministry of Education. It can take place indirectly where officers occupying a superior position to the researcher give directions about research on the basis of their perception of what the politicians would like or dislike. (The perception of the top-ranking officer may not in fact coincide with the views of the politician.) At times, the indirect influence of politics may occur when the researcher attempts to interpret what would be acceptable in the light of the existing political climate. In this instance, the researcher is politically interfering in his or her own work.

Real or imagined, the proximity of the research enterprise to the political arena poses problems for the research process. The extent to which such problems occur varies from place to place in the Caribbean and from minister to minister.

Facilitation of Ministry-Based Research

Despite the limitations noted above, at least two factors facilitate research in ministries.

Ministries of Education have access to a great volume of data concerning the educational system. For example, a great amount of information is generated concerning students' achievements at different levels of the educational system.

Ministries of Education have access to various sources of funding, including tax revenue and can, therefore, attract or allocate significant resources to the research enterprise directly or indirectly.

The tendency for Ministries of Education to become involved in research seems to be increasing. In many instances, ministry-based research has survived confidentiality barriers and political interference. Increasingly, data are being analyzed and funds are being provided for research. One ministry has established a precedent of borrowing money from an international agency to carry out research. All of these signs are promising although it is not possible to entirely remove a note of scepticism.

RESEARCH IN PRIVATE ENTERPRISE

Over the last 5 years, a new phenomenon in educational research has emerged in the Caribbean. Research institutes have been established as a result of private enterprise. The first such unit to be established was the Mel Nathan Institute in Jamaica sponsored by the United Church of Jamaica and Grand Cayman. The second was the Centre for Research in St Lucia, which was started by an individual but has now been incorporated as a nonprofit limited liability company.

Although the church has had a long and good record of involvement in education in the English-speaking Caribbean, it has never before become involved in educational research. In fact, it could be said that the Mel Nathan Institute in Jamaica sponsored by the church is really the brain child of a particular pastor who has had the blessing of the church in establishing this institute. In other words, both institutes have been established because of the personal interest and commitment to research of particular individuals.

Both Institutes have concerns that are wider than education although education is a very important element of research being done. In the case of St Lucia, it represents the commitment of an individual who has decided to live in St Lucia and to continue in research. In Jamaica, it represents the effort of an individual who works within a ghetto community to understand that community. Both individuals are trained in research and in fact are attempting to pursue their research interest where they have committed themselves to work. In both instances, there are no existing structures to which these individuals could become affiliated. In large measure, therefore, they have created their own structures to follow their research commitment and interest.

In terms of size and current impact, they are insignificant institutions. However, they could signal the evolution of a new element on the research scene in the Caribbean. Increasingly, as research is established as a vital and valuable activity that can significantly contribute to survival and as more Caribbean nationals are trained in research, then it would seem that one possible development could be the growth of the research enterprise in the private sector.

To date both institutions have been able to attract funding from the governments of their respective territories as well as from international agencies. They have been able to do so on the basis of the kind of projects that they have pursued. In St Lucia, for example, the Centre for Research has a monopoly position with respect to any question that needs to be researched in that territory. In Jamaica, the question being examined by the Mel Nathan Institute -- the orientation of ghetto youths -- has not been the concern of any of the established institutions in the university or in government. Whether such institutions will survive over time and whether others will be established remains to be seen but this is a recent development that seems to have significant potential for the future.

THE CARIBBEAN CONTEXT

Research is never neutral. It is sensitive to political, ideological, social, religious, and cultural factors in the particular setting in which it takes place. Education is a social phenomenon intricately interwoven in the social, economic, and cultural fabric of any given society. Of necessity, therefore, educational research must be interpreted within the context in which it is taking place. This chapter describes the political milieu, economic patterns, cultural ferment, social stratification, educational setting, and intellectual concerns that characterize the Caribbean and constitute the background against which educational research must be considered.

POLITICAL MILIEU

Modern Caribbean politics began to emerge in the 1930s stimulated by widespread social discontent (Sherlock 1966: 82 and 86).

> The year 1938 showed that the road to equality for the mass of people was through active protest. The price of protest was 47 killed, more than 400 injured, and over 1000 arrested. Out of the protest emerged an organized labour movement .... [that] had political as well as economic objectives. The demand was not only for higher wages and better living conditions but also for drastic changes in the constitution so as to take power out of the hands of the propertied classes and put it in the hands of the people.

The worldwide economic depression of the 1930s had aggravated many chronic social ills. The old colonial political structures could could not contain the onslaught that resulted. Until then, the local assemblies in every island had been controlled mainly by the plantation interests and had a very limited franchise. Across the Caribbean, genuine mass movements emerged. They were organized primarily as trade unions and secondly as political parties. Although the causes may have been social and economic, the political rallying point was nationalism. The demand was for the destiny of Caribbean societies to be determined by the Caribbean peoples.

The net result of the agitation of the 1930s was constitutional reform in the 1940s. Adult suffrage became the norm. For the first time, all races and classes had a chance to participate in the political decision-making process of their societies. The Caribbean colonies adopted the Westminster model of parliamentary democracy and, under British tutelage, cabinet governments were established where the cabinet reported to parliament and executed policy through ministries. Political parties of all ideological persuasions across the political spectrum emerged. Invariably, two effective political parties gained ascendancy in most territories. Under the watchful eye of the British, through the electoral process, parties alternated in government.

From this beginning, national sovereignty and political independence have been the dominating themes of Caribbean politics. At first, the British suggested a federal association, as had been used in several other colonies in different parts of the world. The concept was for the introduction of a British West Indian Federation encompassing all the former colonies as a single nation. In the 1950s, this concept was implemented but the federation was short lived. In the first place, the federation included only 10 of the 16 British colonies in the region. Secondly, the feeling of distinctiveness among Caribbean peoples proved to be stronger than a unifying Caribbean identity. As the idea of a federated West Indies receded, the concept of small individual sovereign states emerged. Beginning with Jamaica and Trinidad in 1961, and followed by Barbados, Guyana, Bahamas, Grenada, Dominica, St Lucia, and St Vincent and most recently in 1981 by Belize and Antigua, former British colonies became sovereign nation states.

Caribbean nations have not come to national sovereignty through armed struggle. That political independence has been achieved through civilized and polite discussions around the conference table underscores two important points:

. The extent to which the various Caribbean nations had accepted the British way of life and social philosophy: nowhere in the independence movement was any attempt made to dismantle the various structures that had been built up during the colonial era nor was there any attempt to get rid of what had been established under British rule or those things that were British in origin or essence;

. The extent of the confidence of the British in the Caribbean people that, when they came to political independence, they would continue to maintain institutional arrangements that had been established.

The transition from colony to sovereign state has occurred smoothly in almost every instance. In the various independent states, with a few exceptions, governments have continued to change via the ballot box. Because of this, the Caribbean has been known until recently as one of the politically stable regions of the world. Of the 10 independent Caribbean nations, only two to date have not proven to be viable practicing democracies. The first is Grenada where the government of Eric Gary, which was in power at the time of political independence, used questionable means to remain in power after an election in which there was evidence that the opposition, the New Jewel Movement, should have been elected. In a coup by the New Jewel Movement, the Gary Government was removed from power; since then, there have been more social disruptions. This is the only instance to date in which a government has changed in the English-speaking Caribbean by means of armed struggle. Although there has not been a coup in Guyana and elections have been held periodically, serious questions have been raised about the government's legitimacy. In addition, because the governing party has practiced the concept of the paramountcy of the party, it has attempted to control all interests in the country and, as a result, has fostered widespread victimization and a repressive climate.

Generally, in the Caribbean, political parties tend to cut across racial, religious, and class lines (see Munroe and Lewis 1972; Stone 1973; Ryan 1975). They, however, express different ideological philosophies with respect to social and economic policies. The exceptions to this are Guyana and Trinidad where politics tend to run along racial lines dividing the Black from the East Indian communities. So far, the parties that have held office have been those representing the interests of the Black community.

An examination of the interrelationships between politics and education in the Caribbean reveals a number of common tendencies.

First, in all Caribbean nations, education has been accorded high priority both in stated government policies as well as in the commitment of expenditure. To date, this has been true of all parties that have held office in all Caribbean nations. This high investment in and commitment to education is in response to the expectations of the Caribbean peoples in the power of education and the desire on the part of governments to satisfy and meet these expectations.

Second, succeeding governments of different political parties and ideological persuasions have continued the educational policies of their predecessors. Education has, therefore, not only been accorded high priority but it has also enjoyed continuity of effort over time. The main issue in education has been the claim by opposition parties that governments have not been doing enough or have not been doing it properly. Once in office, therefore, the new government has tended to seek to improve what had been implemented by its predecessors and to add new elements that it conceived to be lacking. What has not happened is the reversal of major policies of previous governments and the dismantling of structures and strategies that have been put into place.

Third, because of the high priority accorded to education, it features very prominently in the political campaigning process. Opposition parties highlight educational plans and programs they would implement once in office and the government party invariably displays its policies and achievements in education as one of the main means of establishing a record of achievement and success.

Notwithstanding these three points, succeeding governments have been severely criticized in all of the Caribbean countries for failing to establish the educational system and the levels of educational performance desired by the various societies.

ECONOMIC PATTERNS

Caribbean economies invariably revolve around tourism and agricultural production. This includes, mainly, export crops of sugar, bananas, spices, and citrus, and rice and coffee in the case of Guyana and Jamaica respectively. In addition, small farmers produce yams, cocoa, breadfruit, and other staples for domestic use.

Industrial enterprises include mining of bauxite in Guyana and Jamaica, manufacturing in Guyana, Jamaica, Trinidad, and Barbados, and production of oil in Trinidad.

Irrespective of the particular configuration of those elements that constitute the economy in a particular Caribbean nation, three tendencies are common (see Girvan and Jefferson 1971; Beckford 1975; Brewster and Thomas 1976).

First, the societies are unable to produce enough jobs to absorb all the school leavers each year. Thus unemployment in the Caribbean has been chronically high: among school leavers, in many instances, the rate is greater than 50%. These youngsters are much better educated than their parents, have much greater expectations, and are unwilling to occupy themselves with the opportunities that were available to their parents in traditional agriculture and subsistence-farming.

Second, not all the school leavers are literate or possess the skills needed to obtain some of the jobs that are available in the economy. In other words, there is a proportion of the school-leaving population each year that is unemployable.

Third, there are many vacancies for which the required skills and competence are not available in the society. Although these vacancies are not in keeping with the number of jobs available, unemployment coexists with vacancies requiring the society to employ skills from outside.

With the possible exception of Trinidad, the local economies are not able, in terms of the available resources, to sustain the kind of lifestyle that Caribbean people now expect. The Caribbean is geographically very close to North America: the nearest island in the Bahamas is only 15 minutes away by air from mainland USA and the furthest point in the Caribbean, Guyana, is only 4 hours away. With the current ease of travel, a visit to North America is a real possibility for vast numbers of persons within the Caribbean. Those who may not be able to afford the trip on their own may take part in one of the farm-workers' or domestic-helpers' schemes operated with Canada and the United States.

The Caribbean shares a common language with the United States and Canada. With the mass communication system of the region closely linked to that of North America, almost everyone in the Caribbean is aware of the standard of living and the way of life in two of the wealthiest countries of the world. The history of the region has included continued migration from the Caribbean to the United States. Thus few families in the Caribbean are without some relative in the United States who frequently returns to bring goods and to relate the stories of the good life there. It is virtually impossible, therefore, to expect that the people of the Caribbean will be satisfied with a standard of living that is well below that which they hear about through relatives, see on the television screen, read about in the newspapers, come into regular contact with through the tourist industry, and may see for themselves on visits to the United States or Canada. The high expectation of the North American lifestyle is not matched by the resources of the Caribbean. This creates conflict and disillusionment.

The economic recession that has been known in Third World countries, especially over the last 5 years, is evident in the Caribbean with the exception of Trinidad. Although this has not resulted in the retrenchment of educational expenditure, it has slowed it considerably and growth in real terms has been close to zero if not negative. There is, therefore, increasing disillusionment about whether the promised educational goals of the previous decade will in fact be realized and whether the current quality and quantity can be preserved. In almost every territory, there was expectation of universal education for children between the ages of 5 and 17, significant expansion of further education, and increased possibilities for university education. The increasing realization of

Caribbean educators and the public is that these dreams are not likely to be realized in the 1980s. From an economic point of view, there is, therefore, some gloom on the educational scene, the very area that has been the main source of upward mobility for the poor and dispossessed.

The general economic malaise and the growing discontentment have placed considerable pressure on the political institutions. Although it is generally recognized that the economic situation in the Caribbean at the moment could lead to social and political upheavals, there is at the moment within the region an earnest search for alternatives; that is, ways of achieving the original goals at a much lower cost or, at best, getting the most from the expenditures and the resources that are available.

The decade of the 1960s and the early 1970s was a period of economic prosperity and rapid economic growth for Caribbean nations. The educational expansion and reform that was carried out in most Caribbean states during this period was made possible because of the favourable economic climate. During this period, the prospects of universal education, full employment, and general prosperity seemed very real. This is in sharp contrast to the period of economic gloom, educational stagnation, and widespread high-level unemployment that currently exists. The future prospects do not encourage confidence.

CULTURAL FERMENT

The culture of the Caribbean is invariably described as Creole where this is taken to mean the Caribbean variation of the parent culture of the Old World countries -- China, India, Europe, and Africa -- from which Caribbean people have come. Historically, Caribbean societies have been pluralistic (see Smith 1965; Govela 1970; Horowitz 1971; Cross 1979) with the two major subcultures being based on the variations from European and African cultures. During the colonial era, the European Creole culture was dominant, although it was the culture of only a minority of the population. It occupied the superordinate position with the African and other cultural variants having subordinate and minority positions. The European variant was the culture of the educated, the intelligent, and the elite. The African and Indian variants were the culture of the masses -- the underprivileged and the dispossessed. Political independence has removed European domination and with it the overt means of maintaining a dominant minority culture. The educated and the ruling classes have been left with the minority culture without either the external authority or the internal power to sustain it.

The culture of the masses has begun to emerge as the dominant culture of the society. This is not only because it is practiced by the majority of the population but because, in moving away from European colonialism to national sovereignty, national identity is defined largely in terms of the distinctive features of the culture of the masses. Thus, what is essentially defined as Caribbean -- or Jamaican, Barbadian, Trinidadian, Guyanese, Antiguan, or St Lucian -- is the very culture that hitherto was conceived as inferior, indecent, vulgar, and shameful. The culture that now gives the unique identity and distinctive quality to Caribbean life was very recently that which was snubbed, devalued, and degraded by the educated and privileged classes in the region. Also, the culture that was valued and considered to be good and worthwhile is that which the society is now moving away from to find a different identity. There has always been a gulf between the culture of the educated and the elite and that of the masses. Those persons from the broad mass of the Black and Indian population who were given the opportunity of upward social mobility were required through the socialization process to denounce their folk background to assume and utilize the opportunities granted them through education. One of the major purposes served especially by high-school education was to Europeanize both members of and aspirants to the middle and upper classes.

The effect of political independence was to set in train processes that will eventually lead to a total transformation of the cultural status quo. Caribbean societies have already begun to pass through a period in which there is re-evaluation and reinterpretation of many aspects of their culture. This process of cultural transformation, requiring the reordering, revaluing, and restructuring of the various elements and arrangements, poses enormous problems. Although the cultural identity of the society resides in the culture of the masses, technical and professional competence resides in the culture of the minority, which is now being replaced. This is the very section of the society from which leadership is expected to come.

An example illustrates this point. Each Caribbean state has a local dialect and these dialects all have a largely English vocabulary. In the past, the interpretation of this dialect was that it was bad, broken, and poor English. It was the language of the uneducated, the language of the masses. The language of the educated and the privileged was English, especially if it was spoken with an Oxford accent. At present, although English remains the official language of the society, there is a new interpretation and understanding of the dialect. It is now recognized as having its own morphology and syntax, which are basically West African. In fact, it is now recognized as a language of its own -- a Creole that represents the linguistic accommodation made by the African slaves to the language demands of their new environment. They kept their morphological and syntactic grammatical structures but applied them to a largely English vocabulary to communicate with their European masters. The Creole is, therefore, an African survival and is the African linguistic heritage: it is certainly not broken English. As a language, it has its own rules of syntax and its own unique way of codifying and representing experience. Many concepts and ideas are easily expressed in the Creole but lose their nuance and subtlety in translation into English. Similarly, many English structures have no parallel in the Creole. Thus, the Creole is the language of cultural identity and of internal communication in the society. English, on the other hand, is the language of international communication and the language of officialdom.

With the new recognition of the Creole, a kind of reverse discrimination has developed. Some people have attempted to use it in place of English and wish to see English replaced by the Creole. They see English as part of the colonial legacy and a relic of imperialism. However, English has a significant place in the Caribbean societies because it is one of the major languages of international communication. For a small country, one of the language needs is to increase the competence of nationals to communicate in several international languages and English is, at the moment, the only widely used international language in the region. Thus to remove it is to isolate the countries of the Caribbean from the rest of the world. Although each Creole is understood within the confines of its own circumstances in a particular island, each is distinctive. Hence, no single Creole can be regarded as representative of the Caribbean, despite the mutual intelligibility of the various Creoles in the region.

Many Caribbean societies no longer take the old position that the Creole must be eliminated because it is bad or broken English, but neither are they willing to accept the position of the cultural nationalists who advocate the overthrow of English. The position that they take is that English and the Creole should coexist because they serve different purposes. Therefore, the educational system has to move away from the position in which the use of Creole on the school premises was sacrilege because it brought the language of the market place into the halls of learning. However, introducing the Creole cannot be at the expense of English; its use should facilitate the learning of English and all other subjects.

In taking this middle-of-the-road approach, and very sensible position, however, a number of problems are still ignored:

. How can English be learned in the Caribbean and be taught in such a way that those who learn it are not anglicized and Europeanized as in the past?

. How can the Creole be transformed into a written as well as a spoken language?

. Will attempting to standardize the Creole in each Caribbean territory eliminate that language?

This example of the change in attitude to the Creole serves to illustrate the need within Caribbean societies for a reversal of the conditioning processes of the past. Equally, significant changes are needed in the socialization process, gulfs that have existed between different segments of Caribbean societies must be bridged, various elements of the national culture must be revalued, and new responses and new meanings must be created. However, the ultimate outcome of the present ferment and the particular strategies that will be employed cannot be predicted. A multiplicity of voices are saying different things at the same time -- and sometimes the same voices say different things -- and no clear leadership nor single source of authority dominates. Thus the situation is extremely fluid.

This, then, is the cultural context in which educational research has to operate, the framework from which it will draw its interpretation and within which it will be interpreted.

SOCIAL STRATIFICATION

The social stratification of Caribbean societies is one of the key determinants of the organization of the educational system (see Lowenthal 1972; Braithwaite 1975; Miller 1976). The class divisions in the Caribbean were originally drawn during the period of slavery along racial lines. What has emerged has been described by Henriques (1953) as the colour class system. The social stratification of Caribbean societies immediately after the abolition of slavery in 1838 included a small White upper class, a slightly larger Brown middle class (with a Jewish minority in Jamaica), and a large Black lower class. Starting in the 1840s and continuing for the rest of the 19th century, large numbers of Asians indentured from India and China in particular were imported into the Caribbean region. The largest concentration of these were in Trinidad and Guyana and to a lesser extent Jamaica. They came into the society to fit into the same sociological niche that had been occupied by the ex-slaves. At the turn of the century, there was migration into the Caribbean of people of Lebanese and Syrian ancestry who entered the Caribbean societies as traders in merchandise and thus joined the middle class.

The social stratification that exists in the Caribbean now bears many resemblances to its original form although there have been several modifications and adjustments. The upper class is still predominantly light skinned, that is, White or Brown, but it now also has a number of Jews, Syrians, Lebanese, Chinese, Indians, and Black members. The middle classes are the most cosmopolitan of Caribbean societies, having significant numbers of members from all racial groupings and social backgrounds. Although the middle class has grown significantly in the 20th century, it is still small in comparison to the huge lower class. In essence, the lower class has remained predominantly Black and Indian; thus, the societies are not radically different in the latter half of the 20th century from the social composition that existed in the first part of the 19th century and before.

Modernization and insutrialization have resulted in the creation of a new class that had not existed previously in Caribbean societies. Workers in the oil fields of Trinidad or in the bauxite industry of Jamaica or in the tourist industry in the Bahamas earn salaries that are equal to those from many middle-class occupations. They live in the same localities, send their children to the same schools, have the same aspirations and outlook as members of the traditional middle class yet in terms of their education and social background they are not middle class. In values, outlook, income, and lifestyle, these workers are middle class; in education and social origin they are lower class. This new class has emerged since World War II and has increased significantly over the period. In summary therefore, the social stratification now consists of a predominantly White and Brown upper class, which has minority representation from other racial groups; a traditional middle class that is cosmopolitan in its racial composition; a new class, predominantly Indian and Black, that has a lifestyle, orientation, values and outlook, and income resembling the traditional middle class but with strong connections through social background and education to the lower classes; and a lower class that remains predominantly Black and Indian.

Education has been the major vehicle through which children of the lower class have been able to attain middle-class status. The particular type of education that confers this status has been high-school education linked to the GCE (General Certificate of Education) examinations. This type of education, therefore, has become the most sought after and prized in the region. For various reasons, the number of students receiving this type of education has been kept uncomfortably small in relation to the demands and the needs of the society for persons educated at this level. In an indirect way, teachers' colleges have also provided upward social mobility as well as fulfilling their stated function of providing teachers. Whatever the particular type of institution, education has been the main route for upward social mobility for the underprivileged classes. Consequently, it has been highly prized and greatly valued and many parents, especially mothers, have made considerable sacrifices to give their children a good education.

One feature of education in the Caribbean is that there has always been a cross-purpose between the reasons for which education is provided and the reasons why the large mass of the population participate in the educational system. There are numerous examples of people accepting a particular form of education and then using it for very different reasons. For example, the use of the teacher's certificate to gain matriculation into another profession (e.g., law or medicine) is well known in the Caribbean. In fact, to a large extent, the beginning of the emergence of the Black professional in the Caribbean came largely from teachers or teachers' children. One of the ironies of the system is that planners and policymakers have often ignored the motivation of the consumers of education.

THE EDUCATIONAL SETTING

The educational history of the Caribbean has been determined mainly by two major events about 125 years apart. The first was the emancipation of slaves in 1834. Although these Caribbean societies had existed for several hundred years, education was almost nonexistent during slavery except for a few schools for destitute White children. The whole focus of the Caribbean colonies was to earn quick wealth for the planter class through the plantation system: education had no place in this economy. With the reality of the slaves becoming citizens and the fear that, as free people without the coercive restraints of slavery, they would take revenge on the planter class or at least refuse to work on the plantation, education was seen as an important vehicle to civilize the ex-slaves and to make them willing workers on the plantations where, to that point, they had been forced to work. To the slaves, and the missionaries who championed their cause, education was seen as a major means by which they could demonstrate the humanity of the Black people and afford them the opportunity to rise in the new free society.

Free elementary education in the Caribbean, therefore, is the contemporary of similar mass elementary systems in the industrialized Western world and has existed for almost 150 years. With the elementary school came the need to produce local teachers and a system of teacher training developed. In this, the most able students of the elementary school were recruited to be trained as teachers through a pupil-teacher and monitor system. The elementary-school/teachers'-college system catered mainly to the Black population so that the teachers' college acted as the Black population's secondary school.

The educational system in the Caribbean has always mirrored the social structure. Thus, if the elementary school and teachers' college catered for the Black population, there had to be a parallel system for the Brown and White population. This was to be found in the fee-paying preparatory schools, which were operated from endowment funds or by private entrepreneurs, and the high schools, which emerged in the 1880s. This dual system was established in the 19th century and continued almost intact until the middle of the 20th century. One of the few modifications was the establishment of a concessionary scholarship scheme whereby a few children from the elementary school could gain places in the high school.

The second major event influencing educational history was the movement towards political independence that began during a period of social upheaval in the 1930s and was followed by political and constitutional changes in the 1940s and the corresponding educational developments in the 1950s and later. The march to political independence brought with it a great surge of educational developments. Seven of these developments were of particular importance.

First, the education system was expanded significantly. This involved:

- Massive building programs at the primary and secondary levels;
- Significant increases of teachers in training; and
- The use of the shift system where two sets of teachers and pupils use a single building during a single day.

Second, free primary, secondary, and in some territories university education were introduced and universal education for every child between the ages of 5 and 17 was achieved in some territories.

Third, compulsory education laws were enacted in some countries.

Fourth, early-childhood education for children aged 4-6 years and technical education were established or expanded.

Fifth, sixth forms and community colleges were developed.

Sixth, curricula were developed and reformed in every country.

Seventh, school-related welfare programs were introduced or expanded. These helped parents of poor economic backgrounds to send their children to school by assistance with grants, school-meal programs, school uniforms, books, rental schemes, and other support services.

As a result of these developments, the following achievements have been made in the region:

- Over 75% of the children aged 4-6 years are enrolled in some type of early-childhood program;
- About 95% of the 6- to 12-year-old children are enrolled in primary schools; and
- About 85% of children aged 12-14 years and between 50 and 60% of those 15-17 years are enrolled in schools.

Coming from a situation where, in 1938 in Jamaica, only 9% of the children went to school after age 12, the region has clearly made very significant and rapid progress in student enrollment in recent years.

Notwithstanding these advances, however, not a single Caribbean territory is satisfied with its educational system. This dissatisfaction is heightened by the fact that the educational expansion and improvements that took place in the 1950s, 1960s, and early 1970s were predicated on booming economies that are now in serious recession. The optimism of this period is currently giving way to cynical pessimism in some instances, and to cautious reassessment among the more optimistic.

Issues that are in the forefront of educational debate revolve around five points:

- The learning efficiency of the schools and the quality of education being offered.

- The adequacy of the educational provisions, although at the moment it would appear that the society has attained its limit in terms of what it can afford to give education.
- That boys seem not to benefit as well from education as girls. Caribbean societies are the exception in the Third World and more men than women are illiterate. Compared to girls, boys start school later, attend more irregularly, drop out earlier, and have lower achievement levels for literacy, numeracy, and any other measurable educational outcome.
- Although children are now receiving longer and better education than their parents did, the economic prospect is as gloomy, if not worse. Most pupils leaving school each year end up unemployed and the unemployment rate in the 15- to 24-year-old category in almost every Caribbean state is over 50%. Although these societies have given greater emphasis to technical education and have increased the output of professionals, there is a massive brain drain to North America of the most capable and qualified people. This is especially true in the medical profession with respect to doctors, dentists, paramedics, nurses, pharmacists, etc.
- With children staying in school much longer and in much greater numbers than in the past, a number of social problems are now prevalent in schools that were not so previously. This has put great strain on the teaching profession to cope with the diversity of problems, especially at the secondary level. These relate to teenage pregnancy, use of drugs, general delinquency, and a number of other problems and concerns. These issues are often grouped under the umbrella of "deterioration of discipline" in schools.

INTELLECTUAL CONCERNS

Research is an intellectual pursuit. The intellectual history of any given society will have some impact on and implications for the way in which research emerges and evolves in that society. Curtin (1975) observes:

> The fact that a given society is colonial opens special problems in its intellectual history -- problems that would have little meaning in a metropolitan society. Such problems emerging from a study of 19th century Jamaica concern the origin and transfer of ideas. The ruling Jamaicans were European in culture and education, therefore, they might be expected to turn to England for a solution to their problems. At the same time, Jamaican society was very different from British society and British ideas could hardly be applicable to Jamaican conditions. Mother country and colony differed in respect to climate, geography, social structure, and the cultural background of the majority of the people. Nevertheless the ruling classes were united in a common language, a common education, and by the circulation of individuals .... The transfer of ideas was potentially very easy between the two societies which were in most respects extremely different from each other. The problem is whether ideas developed in one kind of environment can be transferred whole to a different kind of society.

Having studied the role of ideas in the Jamaican colony for the period 1830-65, Curtin concluded:

> English ideas were readily transmitted to Jamaica -- perhaps too readily for the good of that country -- in spite of the vastly different milieu in which these ideas were originated.

The colonial history of the Caribbean has important implications for understanding the intellectual history of the region. As Curtin and others (see Gordon 1963; Figueroa 1971) have pointed out, the pattern of Caribbean colonies was to borrow their ideas whole from Europe. The colonial status of the society had important bearings on intellectual activities in terms of the origin of ideas, the source of authority, and the intellectual leaders in the society.

The prevailing intellectual controversies in the mother country invariably dominated discussions within the colonies. Where such ideas did not immediately relate to any pressing practical problems, but merely served to satisfy intellectual curiosity, the fashion of the colony was to be aware of and be able to discuss the most recent ideas of British intellectuals. When it came to the hard realities of practical living and problems were identified, the problem-solving strategy was to clearly identify the problem in the local situation, to search for solutions to that problem that had already been worked out within the mother country, and to adopt that solution and adapt it to local circumstances. Whether in terms of intellectual curiosity or in problem solving, innovation in the colony consisted of the imitation of ideas spawned by intellectuals in Britain.

The fact that the colony received its ideas from outside the society meant also that the intellectual authority resided outside the society. Both the source and the authority were external to the society and local persons only derived authority insofar as they had been in contact with the external source. By and large, this meant that the intellectual leadership of the society came either from Englishmen who had recently come to the colony or from locals who had recently returned from the mother country after spending a reasonable amount of time there. The concept of a local citizen originating an idea in the light of local circumstances, using it to solve problems, and later becoming an authority on that issue was not part of the colonial experience.

Persons who served as intellectual leaders in colonial societies in the Caribbean were drawn from three categories. First, British nationals who had come to work in the colonies bringing with them recent innovations in Britain that they implemented in the local context. Second, colonials who had had the privilege of either studying in or traveling to the mother country during which time they had observed trends and practices in Britain. Finally, individuals who were widely read and probably had professional colleagues in Britain with whom they corresponded regularly.

The pervasiveness of the colonial experience in dominating Caribbean thinking was largely due to the fact that the Caribbean is not populated by an indigenous people who have been practicing a parent culture for thousands of years. The Arawaks and the Caribs, the indigenous Indian population of the Caribbean, were almost entirely eliminated during the period of Spanish colonialism that preceded British colonialism. The population of the Caribbean consists largely of descendants of Old World peoples who came to the region over the last 300-400 years. The fact that the ruling classes were at one and the same time members of both the mother country and the colonial society made it extremely easy for European intellectual tradition and practices to completely dominate the intellectual activities in the Caribbean colonies.

Traditional Mode of Thought

Over time, the colonial experience conditioned a particular way of thinking, a manner of conceptualization that is here defined and described as the traditional mode of thought. Its basic elements are:

. British norms of behaviour, performance, and achievement were established as the standard for the colonies;
. Phenomena in the Caribbean were measured against these norms;
. Where differences existed, these were perceived as deficiencies;
. These deficiencies were perceived as an index of inferiority and were sources of shame; and
. The major objective of the society was to "close the gap" or to become like the mother country.

The major elements of the strategy to achieve this goal would be greater assistance from the mother country through greater inputs of men, money, machinery, and methods.

In the postindependence period, this mode of thinking has persisted with a few minor adjustments. British norms and standards have been replaced by North American norms and standards, principally because of the proximity of the Caribbean to the United States and Canada and the increasing influence and interest of these two wealthy English-speaking countries in Caribbean affairs. The mother country/colony dichotomy has been successfully replaced by developed/underdeveloped, First World/Third World, North/South terminology. However, these reflect changes in styles of expressions rather than any substantive difference. Irrespective of the terminologies used, the enduring characteristic of this mode of thought is its unquestioning quantitative approach rooted in comparisons between the Caribbean and the rich industrialized states.

The traditional mode is still the dominant way of thinking about phenomena in Caribbean societies.

Progressive Mode of Thought

Since the late 1960s, a new mode of thought has emerged which, for convenience of communication, will be designated the progressive mode. It is used mainly by some university intellectuals, teachers, playwrights, civil servants, and professionals with Marxist or radical ideological links. It has brought a qualitative dimension to thinking and conceptualization of phenomena in Caribbean society and has infused an element of critical analysis.

The essential elements of this mode can be identified as:

. Norms from Cuba and, sometimes, Russia in combination with Western norms are employed as standards;
. Local phenomena are measured against these norms;
. Where differences are established, these are interpreted as deficiencies and are critically analyzed within a Marxist framework;
. The magnitude of the deficiency is seen as an index of exploitation by the former colonial or neocolonial powers;

. The cause of the deficiency is established as structural factors related to the ownership of the means of production in the society; and

. The cure is postulated as radical and fundamental changes involving the destruction of the old structures and the implementation of ideological solutions predicated by an application of Marxist principles.

Although this mode of thinking has brought a qualitative dimension to the way of conceiving phenomena in Caribbean societies and although this is far more penetrating and powerful in analysis, this mode shares a number of common features with the traditional mode:

. Both are employing standards, norms, and conceptual schemes that are external to the Caribbean society;

. Both are drawing inspiration and authority from outside the Caribbean region;

. Both employ strategies of adopting and adapting solutions that have been worked out elsewhere;

. Both lack creativity and inventiveness;

. Both conceive of Caribbean circumstances within the context of deficiency. In the traditional mode, this is interpreted within the context of inferiority; in the progressive mode, it is interpreted within the context of exploitation;

. Both are equally disdainful of life as it exists within the Caribbean; and

. Both sets of scholars are from the same socioeconomic background. The difference between them is mainly that of age, those of the progressive school of thought being younger.

Nationalistic Mode of Thought

Emerging with the nationalist movement that led to independence, and growing stronger since, has been another mode of thought that is designated here as the nationalistic mode. This mode asserts that Caribbean society must conceive and interpret itself according to its own image, judge itself according to its own standards, and recognize its own authenticity. The argument is that, although the society has its roots in European, African, and Asian cultures, these have been put together in a melting pot and what has emerged is unique in character, legitimate in itself, and valid.

The essential features of this mode can be summarized as:

. It seeks to recognize, develop, and establish Caribbean norms and standards;

. It accepts that not all differences between phenomena in the Caribbean, as judged against European and American norms, represent deficiencies or exploitation;

. It seriously questions whether the Caribbean should strive to become like the so-called developed societies, except in technology;

. Where deficiencies are recognized, structural and qualitative explanations and causes are identified;

. Solutions are developed in accordance with the specifications of a particular problem within the local context;

. Where borrowing is done from other cultures, it is to meet a specific need as part of an overall solution and is not the total solution; and

. It rejects both the traditional and progressive tendencies to be directed by external authorities in the Western or Socialist worlds. Its only loyalty and commitment is to the Caribbean nations themselves.

Thus the essential thrust of this mode of thinking is to interpret the world and Caribbean society through Caribbean eyes. It is to create and invent solutions rather than to borrow. In a sense, these scholars run the risk of attempting to reinvent the wheel and also of becoming isolationists.

The Mix of Modes

A significant point to note is that these modes of thinking are not mutually exclusive. It is not unusual for the same person to use different modes in different circumstances, in one situation adopting the traditional mode and in another the nationalistic mode. This underscores the state of flux, degree of consistency, and degree of ambivalence existing in Caribbean society at present.

EXISTING RESEARCH CAPACITY: WINDWARD AND LEEWARD ISLANDS, THE BAHAMAS, BARBADOS, GUYANA, AND BELIZE

The research capacity of a country[1] can be defined as its capability to produce and disseminate research results on a continuous basis from indigenous resources. The essential elements of research capacity are:

. Trained and experienced researchers;
. Institutions whose objectives and functions include research as either a primary or supporting activity;
. Support services that include library and documentation facilities, information networks gathering and circulating primary source materials, links to information systems used by the international research community, and computer facilities with appropriate software;
. Journals for the dissemination of research findings;
. Funding for both core institutional costs and projects; and
. Formal and ad hoc training to ensure continuity in the supply of competent researchers.

In describing educational research capability in the English-speaking Caribbean, I consider the existence or nonexistence of each of these elements in the several states.

WINDWARD AND LEEWARD ISLANDS

The Windward and Leeward Islands consist of the islands of Antigua, Dominica, Grenada, Montserrat, St Kitts-Nevis, St Lucia and St Vincent, and the Grenadines. Of these, Dominica, Grenada, Antigua, and St Lucia are independent states and have achieved political autonomy within the last 3 years. St Kitts-Nevis, Montserrat, St Vincent, and the Grenadines are still associated states within the British Commonwealth. They are still colonies of Britain but are at the moment at various stages in negotiations with the British Government concerning the question of political independence.

Irrespective of their political status, these seven countries are all members of various Caribbean institutions such as the University of the West Indies, the Caribbean Community (CARICOM), the Caribbean Development Bank (CDB), and the Meteorological Services. Although these seven states are participant members of the University of the West Indies, they do not have campuses of the university within their borders. They are part of the noncampus territories. The presence of the University of the West Indies is maintained by an arm of the Extra-Mural Department, the University Centre. The centre in each island is run by a Resident Tutor whose role includes the establishment of adult and public education programs. Educational research is not included in the major responsibilities of the University Centres.

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[1] The research capacity of the various states of the Caribbean described in this and the next two chapters existed at the time of a survey done for the World Bank in April-May 1981. A full description of all the institutions involved can be found in Miller (1981).

Research Institutions

Only one small research institution is currently in operation in the Windwards and Leewards. This is the Caribbean Research Centre located in Castries, St Lucia. It is a private organization that is currently being incorporated as a nonprofit limited liability company. Its Executive Director is a former resident tutor of the Extra-Mural Department of the University of the West Indies in St Lucia. Currently she is the only trained researcher on the staff of the centre; however, researchers are employed on short-term contracts when the centre has been contracted to carry out projects.

The major functions of the centre are to conduct research, especially in education; operate a hostel for researchers and other personnel needing accommodation; develop a register of all available documents about St Lucia locally, regionally, and internationally; offer counsel and guidance to persons doing research about St Lucia; and develop publications about various aspects of St Lucian life.

The operation of the hostel by the centre is the main source of revenue apart from funding provided for specific projects. Agencies that have assisted the centre so far include Barclay's Bank Development Fund, World Wildlife Fund, the Rockefeller Brothers Fund, United States Agency for International Development (USAID) and Environment and Development in Africa (ENDA).

Completed projects to date are:

- Feasibility study on national literacy for St Lucia -- 1980
- Water in our development: An experimental, environmental education project -- 1980

Research in progress includes:

- Language and development: The St Lucian context toward orthography for St Lucian Creole
- The economic role of women in small farm cooperatives

Projects about to come on stream are:

- Alternative energy sources for St Lucia (A joint project of York University, the Canadian International Development Agency (CIDA), the Central Planning Unit of St Lucia, and the Caribbean Research Centre)
- Archives alive: A multimedia pageant educational kit on aspects of St Lucian history
- Innovations in the fishing industry (A joint project of Unesco, the Government of St Lucia, and the Caribbean Research Centre.

The Caribbean Research Centre hostel was established in June 1978 and the offices opened in September 1979. Since then, the activities of the centre have grown very rapidly from small beginnings. The major constraint facing the centre at the moment is the need for more stable funding and for more adequately trained staff.

Researchers

In these seven islands, usually referred to as LDCs (less-developed countries), only about three persons are engaged in educational research. They are all associated with the Research Centre in St Lucia. If the definition of educational research is widened to include those involved in the regional projects in curriculum development, then there are about 10 and there are 27 persons living in these states who have received training in educational research to at least the master's degree level. There are two in Antigua, three in Dominica, five in Grenada, eight in St Lucia, four in St Kitts, and five in St Vincent. The number in Montserrat is unknown.

The research competencies of these persons are mainly in the areas of curriculum development, sociology, and psychology of education. Most of the persons identified with research skills in these LDCs are employed in Ministries of Education and Teachers' Colleges. They are, in essence, a potential and not a realized capability.

Support Services, Journals, and Training

There are no support services for educational research in the Windward and Leeward Islands. Those persons pursuing research must use the major public libraries. However, these libraries' holdings for educational research is very rudimentary. Similarly, computing services are not available. In the case of the Research Centre in St Lucia, data analysis is done manually.

In keeping with the fact that there is very little research going on in these LDCs, no journals that disseminate research findings have been produced in these territories.

Funding

In the case of St Lucia and Grenada, curriculum-development projects have been started to improve the level of learning of certain basic subjects, such as English and mathematics, as well as to transform the curriculum in accordance with the new political status. In both these countries, the governments have provided funding for curriculum-development activities that have involved some research. As has been observed in the rest of the Caribbean, curriculum development is an area that has attracted local funding and is the only type of research activity that is being funded at the moment in these Eastern Caribbean states. The other curriculum-development activities that are taking place are funded from regional sources and not national governments.

Constraints

These Caribbean ministates are only just beginning to emerge from colonial rule. The Research Centre in St Lucia is the creation of a highly motivated individual and is a private concern. Although it has received sympathetic consideration from the Government of St Lucia and has even undertaken projects commissioned by the government, it is not a government-sponsored concern.

One of the most crucial factors that mitigates against the establishment of a research capability in these states is the fact that they are struggling for economic survival. Such funding as is available is invariably used for service functions. Research is seen as a luxury and not something that can be supported from local resources. Another important factor relates to the number of trained personnel who live in any single state. In this regard, St Lucia is probably the best endowed. The lack of adequately trained personnel in research makes it difficult to conceive that a research enterprise could emerge in the foreseeable future even if funding were immediately provided. It is important to remember that the personnel who are trained to do research are not all employed in research.

Although these seven states all share a similar geographical location, economic history, and culture, they do not behave as a single unit. Consequently, the problem of thinking of a research enterprise in these states is the insularity of thinking and concerns and the strong sense of national identity that exists with respect to each one of them. One would think that, where research into problems in these ministates is being considered, the geographical location of the headquarters of such projects would have to be Barbados.

Comment

A number of different problems in these seven ministates are unique and peculiar to small island states. Insights gained from problems investigated within the larger states may not be generalizable and applicable to these states. Similarly, solutions that are practical within these small states might not be feasible and applicable within a larger framework. It would seem, therefore, that these states have peculiar and unique problems that must be addressed in a different way from the concerns of the larger Caribbean territories and that research could make an important contribution.

THE BAHAMAS

The Bahamas has just begun the process of institutionalizing educational research. The institutional linkages to foster such research are currently being organized and the elements of a research enterprise are being put into place. Some individuals in the Bahamas are trained educational researchers. In examining the research enterprise in the Bahamas, therefore, one has to look more at potential and work in progress than at past achievement.

Research Institutions

Only two institutions in the Bahamas are engaged in educational research. These are the College of the Bahamas and the Ministry of Education and Culture. Research is neither the primary concern nor the major resonsibility of either of these institutions. It is carried out in support of some service functions or correspondingly is permitted by a sympathetic administration. Research is actually carried out by highly motivated individuals as an additional activity to their main duties. There are 35 professionals actively engaged in educational research in these two institutions.

College of Bahamas

The College of the Bahamas has an academic staff of 128 of whom many hold master's and doctoral degrees that include training in research. At the moment, 10 are actively engaged in research projects. These projects are almost entirely individual efforts and reflect the concerns and interests of the staff members involved. The college is 5 years old.

In 1980, a Research and Publications Fund of US$20,000/year was established to help foster and encourage the pursuit of research in the college. This fund is not restricted to educational research but is applicable to any kind of research whatsoever. Educational research is, in fact, being institutionalized as part of the general effort to institutionalize research as a substantive activity of the college. It is important to note that the staff of the Education Department of the college is not at the moment actively engaged in research and the educational research that is being done is being carried out by staff members from other departments. Staff members are being encouraged to pursue research by being given lighter teaching loads during a semester in which they are actually carrying out a project.

The major duties and responsibilities of the College of the Bahamas are:

- Teaching for its own associate degree, a 2-year program;
- Teaching for bachelor's degrees of the UWI;
- In-service training of personnel from industry (mainly tourism and commerce), teaching, and government; and
- Community development activities.

The only completed research project done by the college related to an experimental program carried out at the college's inception through a grant from the Ford Foundation. The project, "The Transitional Education Project," sought to develop programs through which mature adults with no formal educational qualifications could be given the necessary background and prerequisite training to allow them to benefit from the formal courses being offered by the college. Ford gave an initial grant of US$30,000 and a further grant of $3000 to assist with the evaluation of the project. This program has now become an integral part of the operation of the college.

Research in progress includes a project related to certain aspects of the tourist industry. This project is sponsored by the Ministry of Tourism and is being carried out by personnel of the college. All other research efforts in progress are the individual efforts reflecting the personal concerns and interests of staff members. These include:

- Education in the Bahamas, 1834-64
- Race and justice in the Bahamas in the 19th century
- Analysis of the oral language of the Bahamian child
- Description of the Bahamian dialect
- A study of Bahamian folktales

The Ministry of Education and Culture

The Ministry of Education has six divisions whose work involves educational research: Planning, School Welfare, School Psychological Services, Special Services, Measurement and Evaluation, and Curriculum.

The work of the Measurement and Evaluation and the Curriculum Divisions deserves special comment. Up to 1974, the Ministry of Education had a separate Curriculum Division that designed and developed the curricula now in use in Bahamian schools. In 1974, this division was disbanded and its work integrated with that of the Primary and Secondary Divisions. There are plans at the moment to reestablish this division but these have not yet been implemented.

Similarly, Measurement and Evaluation was a separate division of the Ministry of Education, but recently it has been integrated with the Examinations Division. However, no arrangements have been made to continue the work on test development in its new location.

Because of these structural changes, no attempt is made to give a detailed description of the structure and work of these divisions. Work that has been done in the past and products that have been produced are identified. The detailed description of the research capability in place at the moment at the Ministry of Education is confined to a description of the other four divisions.

The major responsibilities of the **Planning Division** are:

. Collecting, analyzing, and publishing data on the Bahamian educational system;
. Conducting research and advising policymakers on relevant aspects of the Bahamian educational system;
. Planning projects;
. Liaising with the international agencies;
. Introducing innovations in the educational system; and
. Spearheading innovations designed to improve the efficiency of various functions in the administration, for example, the introduction of the plan program and budget system.

On an annual basis, the division publishes the following:

. A directory of schools showing their locations, sponsorship, and the enrolment, including the breakdown by sex and age;
. An educational statistical digest that includes statistical data on schools and class sizes, pupils, teachers, examinations, and the financing of education -- these data are shown for all levels of the educational system and include schools in both the public and private sectors;
. The annual report of the Ministry of Education and Culture, which details the program of work of the ministry for the particular year; and
. "Teaching in the Bahamas" -- a guide for teachers being recruited to work in the Bahamas.

These publications in themselves require a fair amount of research in both the gathering and analysis of data.

The division is in the process of developing a research agenda for the Ministry of Education by discussing educational problems and concerns with its officers and senior administrators. The proposal is to identify a list of topics, then contract the College of the Bahamas or private individuals to do the actual research. The job of the division would then become the contract management of these projects.

The Planning Division has a wealth of data about the Bahamian educational system, much of which is not analyzed except for the purposes of producing educational statistics for the system as a whole.

The Bahamas is one of the few Caribbean territories with a compulsory-education law. This has been in force since 1874. In 1969, the Ministry of Education expanded its school-attendance officers' concept to encompass a social-welfare function. What emerged was a **School Welfare Division** designed to give assistance to parents in their compliance with the compulsory-education law. The major responsibilities of this unit are:

- Assuring regular attendance at school;
- Fostering closer relationships among school, home, and community;
- Operating various clinics to assist children;
- Carrying out case studies; and
- Providing counseling for children and parents.

In carrying out these functions, the division has found it necessary to embark upon research or to analyze critically the cases it has dealt with over a period of time to identify a pattern and adopt a strategy to cope with common problems. The division has generated and collected a mass of data about the social circumstances of the Bahamian school child, especially on the island of New Providence.

Research projects that it has carried out to date are:

- School attendance survey for New Providence, 1974
- A review of the school-lunch program

Research projects in progress are:

- School attendance survey for the Bahamas, 1981
- Adolescent fertility
- The late starters' clinic, which examines the circumstances of children not registered in school
- The truancy clinic, which experiments with ways of changing the attendance pattern of chronic absentees

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The Bahamas is the only Caribbean country that, at the moment, has a school social service. Many of the problems that they have been dealing with and developing strategies for are common to the Caribbean. A comprehensive and detailed analysis of the data they have collected and the experiences they have had could offer significant insights into these problems not only for the Bahamas but also for the entire Caribbean.

The School Welfare Division deals with more than 10,000 cases each year involving some aspect of the social welfare of Bahamian children.

The **School Psychological Services Division** was originally part of the School Welfare Division. Within the last 5 years, it has become a division on its own. Its major responsibilities are:

- Conducting psychological and educational evaluations of school children;
- Providing consultation services to the ministry and school personnel concerning decisions to be made about individual pupils;
- Initiating and implementing research aimed at solving school-related problems; and
- Providing advisory services to parents, teachers, or individual pupils.

In pursuit of these duties, the section has carried out various research projects. Projects completed to date are:

- A descriptive analysis of the types and categories of cases referred to the School Psychological Services Section
- The relationship between television violence and child behaviour in the Bahamas
- Mainstreaming in the Bahamas

Projects in progress are:

- An evaluation study of the supply/distribution system of materials to schools
- Testing and screening programs for the defence force
- Designing a testing program for students at entry to the College of the Bahamas
- Designing a testing program for the Ministry of Labour for job placement

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Projects that are actively being considered are:

- A study of the psychosocial development of preschool children in the Bahamas
- A study of the self-concept of the Bahamian children

Like the School Welfare Division, the School Psychological Service is unique in the English-speaking Caribbean. The experience and the data that have been gathered by this section could be of use to other countries in the Caribbean and could provide useful insights.

Like the School Psychological Services Section, the **Special Services Division** was once a part of the School Social Welfare Division. Its major functions are:

- Supervising special schools delivering education to disabled children;
- In-service training in special education;

- Advising and guiding the Ministry of Education on policy;
- Offering education to the disabled; and
- Conducting research and public relations programs on special education in the community.

Research projects that are currently being carried out are:

- A survey to ascertain the number of physically disabled pupils in regular schools in the Bahamas
- A survey to determine the number of children with learning disabilities in regular schools in the Bahamas

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Support Services

The Library of the College of the Bahamas

The Library of the College of the Bahamas exists in two physical locations. Its total collection consists of 35,000 books; less than 100 documents in the form of research reports, theses, pamphlets, etc.; and 171 periodical titles. Its audiovisual materials consist of 675 slides; 48 cassette tapes; six video cassettes; six 16-mm films; six records; 960 microfiches; and one microfilm.

Its education collection consists of about 4500 books, 30 periodical titles including four research journals, and about 400 microfiches on educational topics. Its educational collection gives fairly reasonable coverage to the topics of educational philosophy, educational administration, elementary education, curriculum development, and children's literature.

The library has not yet developed links with international networks nor has it links to any of the information networks and data bases in the United States or any other country. Through the current World Bank loan to the ministry, the Oakesfield Library is to be expanded to incorporate the Soldier Road collection so that the library's operations will be centralized at Oakesfield. No further expansion is envisaged for the immediate future. The Oakesfield expansion will not increase the total size of the library but will accommodate the Soldier Road collection. Thus, when it is completed, it will facilitate a more efficient operation under a single roof but will not increase or improve the collection.

The limitations of the College Library with respect to educational research is most glaring in the area of research journals and periodicals. The library subscribes to only 30 titles in education and only four are research journals.

Department of Archives

The archives in Nassau serves as a documentation centre. It is currently used by a number of the persons doing research in the Bahamas especially those involved in the study of Bahamian history. The archives is sited in three different physical locations. Its collection consists of about 1000 books, the major archival records of legislature, judiciary, and the executive branch of government since 1718. It is also developing an oral history program and currently has over 100 tapes of senior citizens recording their views on different aspects of Bahamian history, culture, and development, including educational topics. In addition, it has about 800 microfilm reels.

Its education collection consists of reports, books, the major archival records related to education including such items as the Minute Book of the Board of Education from 1847 to 1927, and all the theses done on education in the Bahamian educational system since 1947. It has three microfilm reels related to education. The archives also has all the major documents related to education in the Bahamas that have been deposited by the various government departments.

Computer Facilities

The major computing facility in the Bahamas that could become available to both the Ministry of Education and the College of the Bahamas is the **Data Processing Unit of the Ministry of Finance.** This computing centre is equipped with two IBM 370 125 machines: they both have memory capacities of 384 K. One machine is used entirely for remote entry through terminals located in various government departments and corporations. The other is used entirely for batch work. The centre has eight disc drives, four tape drives, one line printer, and one mark sense reader. Plans are being implemented at the moment to upgrade the memory of both machines to 512 K each, to upgrade the disc drives, and to make the machines compatible. It is also planned to change over to the diskette system of entry from the present key punch operations for batch work. Both machines have Fortran, Cobol, and RPG compilers. The centre also possesses the Statistical Package for Social Scientists (SPSS).

Thus, the physical hardware exists in the Data Processing Unit to handle any of the data-processing needs of the College of the Bahamas or the Ministry of Education relevant to research. At the moment, it is possible for the computer to accommodate a maximum of 32 terminals; however, only 24 are actually installed and being used. With the current shortage of staff within the unit, educational research projects may have some problems, not because the physical capacity to process the data is limited but because of the personnel limitations.

Funding

Both the College of the Bahamas and the Ministry of Education are funded totally by the Government of the Bahamas. The research activity that has emerged so far in the Bahamas is totally supported from local sources. The Ford Foundation made a small grant to the College of the Bahamas to assist one of the earlier projects, but the continuing research that is being done in the college is, at the moment, funded through the Research and Publications Fund provided by the Ministry of Education. Both core funding, providing for staff salaries, etc., and project funding, whether through the Research and Publications Fund of the College of the Bahamas or departmental budgets of particular sections of the ministry, are from local sources. One can say, therefore, that in the emergence of educational research in the Bahamas there is benign support for this activity locally. So far, this support in tangible terms has permitted the motivated to pursue their research interests. The level of support that exists, however, has not evolved to the stage where team research centrally planned and designed to investigate some major scene is part of the research activity.

Journals

Two educational journals are published in the Bahamas: **College Forum** and **Review.**

College Forum is published by the College of the Bahamas. Its first publication appeared in the fall of 1980 and the latest issue was spring 1981. It is financed from the Research and Publications Fund of the college and is produced by the part-time efforts of academic and clerical staff of the college. The stated policy of the journal is clearly seen in the following statement:

> The agreed policy of the Editorial Committee is that the journal will deal with the concerns of the society without being parochial, that it will maintain stern academic discipline without becoming too esoteric or confined to an exclusive readership, and that it will contain a wholesome mix of papers based on painstaking empirical research and sustained analytic enquiry.

The contributors to the journal have been mainly the staff of the college and one student. The journal currently has a circulation of 500 and is distributed mainly within the college. The recent birth of this journal makes it difficult to make any overriding statement except that a start has been made. In the fall issue that has been published, all the articles were research based.

Review is published by the Learning Resource Unit of the Ministry of Education. Its first issue was dated November 1977 when it replaced **Spotlight,** which had been previously produced for the Ministry of Education by the Planning Unit. The latest issue is March 1979. Although the stated objective is to publish on a monthly basis, so far publication has been irregular.

The Learning Resource Unit was created in the mid-1970s and, for a number of different reasons, became the object of public attention. Because of the need to inform the public in general and teachers in particular about the work of this unit, **Review** was founded. The editor's foreword to the first issue states:

> The **Review** seeks to remedy this communication problem. It will be published monthly and will attempt to keep teachers up to date on new national and global curriculum trends.
>
> Teachers are invited to contribute to this journal any article on educational matters that they would like to share. The contributed articles ought to be concerned with the new educational technology, that is new methods as they apply to the classroom environment.

The journal has carried general educational articles including some with a research base. For some reason, there has been no publication over the last 2 years and whether the journal will continue to be published remains in doubt.

Constraints

There are five major constraints on educational research in the Bahamas at present.

First, research is pursued as an ancillary activity. Researchers have to perform a major service function as their substantive activity. Because almost all of the research efforts are individual, the amount of time and resources that any individual can devote to a particular project is limited. This imposes limitations on both the quantity and the quality of the work that is done, as well as on the problems that can be tackled.

Second, although the various support services exist in the form of libraries and computing facilities, the research activity has not yet been integrated into those services. At the moment, these services are not contributing significantly to the research enterprise. For example, the Planning Unit, the School Welfare Service, and the School Psychological Services are not served by the Data Processing Unit of the Ministry of Finance. The Ministry of Education is actively considering acquiring its own computer but the computing facilities of the Data Processing Unit, in terms of hardware, are perfectly capable of satisfying all the data-processing needs of the Ministry of Education. In addition, the Data Processing Unit suffers from chronic shortage of technical staff. It is quite likely that, even when the Ministry of Education is able to acquire its own hardware, it will run into the same problem with respect to personnel. It is interesting to note that the Ministry of Education is pursuing its interests and obtaining its advice from one of the major suppliers of computers. Although this is the same agency that services the Data Processing Unit, it has not, at the moment, pointed out to the Ministry of Education that the facilities of the Data Processing Unit could be used through terminals located in the ministry. Acquiring its own computer might solve some of the data-processing needs of the ministry but it may create as many problems as it solves. Likewise, the library services are not catering to the needs of research and researchers: they concentrate on books, particularly those that are directed to student needs, while research journals are accorded a very low priority.

Third, the College of the Bahamas is only 5 years old but the Ministry of Education has not accorded it any measure of autonomy commensurate with its being a college of higher education. The ministry has to ratify all the decisions of council. Hence the council is not really free to chart a course for the college. More importantly, the college does not handle its own financing. This extremely tight control of the finances -- the system of ordering, purchasing, and acquiring materials both for recurrent as well as capital function -- does not create the atmosphere of independence that is important to the conduct of inquiry. Although this does not constitute a direct and immediate problem, it could be an inhibiting factor to the development of research at the College of the Bahamas.

Fourth, in the Ministry of Education itself, confidentiality barriers restrict the circulation of the findings of the research done by the ministry. Although the ministry may be aware of findings from research and alter its own policy, there is a potential danger that, if such information is leaked and poses an embarrassment to the ministry and the government, the research activity itself could be thwarted. Even where this does not happen, the confidentiality barriers impose restrictions, and the wider academic community does not benefit from the results of inquiry in the Ministry of Education.

Fifth, research has been developing in an evolutionary and incremental way without any planning. The continued absence of planning could significantly slow the development and institutionalization of research. It will take some planning, for example, to sort out the present situation with respect to data processing as well as to make adequate provisions in the libraries for research. In addition, it will be necessary to devise plans to chart a course for the College of the Bahamas that leads to some measure of autonomy. It will take some planning to move the research activity from being an individual effort related to personal interests to group efforts dealing with national problems. This responsibility for planning rests with the senior management of both the College of the Bahamas and the Ministry of Education, with the Ministry of Education holding the key.

Comment

The educational research enterprise in the Bahamas is less than 10 years old. Thus, the institutionalization of educational research as an integral part of the educational life of the Bahamas is still at an early stage. A positive element here is that educational research has been evolving purely from local inspiration and support. It has emerged mainly from Bahamians or nationals of other countries who are now residents of the Bahamas. A nucleus of persons in the Bahamas has the required research skills and interests and a positive climate offers the necessary support that has assisted research to find a niche in the society.

The development of the research enterprise is a little beyond the teething stage and important linkages with respect to the various support services in terms of libraries and computing facilities are still to be made. As important are the links to information networks and information systems outside of the Bahamas. Also important is the development of linkages with colleague researchers in the Caribbean. One can, therefore, well understand the feeling of isolation that several of the persons doing research feel because these linkages have not yet been established. As one could expect, the research activity and process in the Bahamas is not taking place evenly in all areas. The particular areas of strength are research in sociology, psychology, and social work. In this respect, the Bahamians are pursuing areas of educational research that are unique in the Caribbean and they are working on some problems that have regional implications, for example, absenteeism is one of the key factors that mitigates against the achievement of many educational objectives. Whereas, in the other Caribbean countries, the strength of the research that has been developed has been on the academic side, relating to curriculum, measurement, and evaluation, in the Bahamas, it is on the social side.

It is interesting to note that the Ministry of Education is, at the moment, the stronger institution in terms of the existing research capacity. On the other hand, the College of the Bahamas probably has the greater potential for development of educational research. Without detracting from the Ministry of Education, every effort should be made to enhance and facilitate the development of the college to include a significant research element. Probably a research institute could be developed as a department of the college.

BARBADOS

Educational research in Barbados owes its genesis to the establishment of a Branch of the Institute of Education of the University of the West Indies in 1964 (Miller 1979). Since then, the institutionalization of educational research has been slow, incremental, but steady. At the moment, all the essential elements of research infrastructure are in place although the amount of research generated is not very high.

Educational Research Institutions

Five institutions in Barbados, employing 35 researchers, are actually doing or have the capability to do educational research. They are:

. The School of Education, University of the West Indies, Cave Hill;
. The Curriculum Section, Ministry of Education and Culture;
. The Measurement and Evaluation Division, Caribbean Examinations Council (CXC);
. The National Nutrition Centre, Ministry of Health and Social Security; and
. The Institute of Social and Economic Research (ISER), University of the West Indies, Cave Hill.

School of Education, University of the West Indies, Cave Hill

The School of Education, Cave Hill, consists of two sections: Research and Development, and Teaching. The Research and Development Section is funded from the central University Grants Committee whereas the Teaching Section is funded directly by the Government of Barbados. Although one section is named the Teaching Section both are actually involved in the teaching. Both sections are also involved in research although in different ways.

The major duties and responsibilities of the **Research and Development Section** are:

. To guarantee standards in the seven teachers' colleges in the Eastern Caribbean. This entails acting as the authority that approves syllabuses and curricula for the colleges, serving as external examiner for the colleges, and monitoring the college examinations;
. To teach the education courses for the Bachelor of Education at Cave Hill;
. To provide in-service teacher training through workshops, seminars, and meetings especially where these relate to curriculum development;
. To provide on request consultation to the eight Ministries of Education in the Eastern Caribbean;
.To provide leadership in curriculum development in the Eastern Caribbean and, in the case of internationally funded projects, to serve as the project coordinator and management; and
. To teach the undergraduate courses related to the Bachelor of Science or Arts with Education degrees.

Projects undertaken and completed by the section are:

. The development of models for collecting educational statistics in various Caribbean territories
. The St Lucia mathematics project
. The CEDO/UWI Caribbean science project

- The Unesco/UWI regional project in teacher education and curriculum development in language arts, mathematics, and science
- The UWI/CEDO/Unesco Caribbean mathematics project for junior secondary schools
- The CEDO/UWI Caribbean regional science project
- The United Nations Children's Fund (UNICEF)/UWI-Integrated approach to science and social-studies project
- Profiles of abilities of students in teachers' colleges

Projects that are currently in progress are:

- Science for teachers' colleges
- Social studies for teachers' colleges
- The Grenada reading project
- The Antigua reading project

The work of this section is difficult because it must deal with eight different islands and governments -- Antigua, Barbados, Dominica, Grenada, Montserrat, St Kitts-Nevis, St Lucia, and St Vincent. Development activities, especially curriculum development, have taken precedence over pure research. Thus, research has been in support of curriculum activities. In one sense, the research competencies of the staff have been underutilized.

Because of its long association and close collaboration with the Ministries of Education and Teachers' Colleges in the Eastern Caribbean, the members of this section are most knowledgeable about the educational systems of these small territories. They also have good relationships with the key persons in education in the territories.

In the **Teaching Section**, research is done on an individual basis related to the university's requirements for research and publications to be considered for promotion and other aspects of personal enhancement within the university's system. So far, research projects have not been contracted to this section.

This section is relatively recent, having been established in 1974. Its major responsibilities reside in the teaching of the courses in the In-Service Diploma of Education for secondary-school teachers and general in-service training as requested from time to time by government and professional organizations. For example, the government, through funding from the current World Bank Education Loan, has contracted the Teaching Section to mount a training program for Ministry of Education personnel and senior school administrators.

The research interests of the lecturers of this section tend to be more basic than applied. Funding for such projects on an individual basis normally comes from grants from the Research and Publications Fund of the university.

Not much research is currently being done by members of this section although some ideas are being considered.

Curriculum Section, Ministry of Education and Culture

The substantive responsibility of this section is the development of curriculum for implementation in Barbadian schools. The duties of the officers in this section also include in-service training of teachers in the use of the new materials and monitoring of the implementation of the new curricula through gathering feedback information. This information is used to modify the materials in the light of the field experience.

The research component has resided mainly in the survey information used in the original development of the materials, collection of feedback data, and evaluation of the new curricula in the field.

Measurement and Evaluation Division, Caribbean Examinations Council

The major responsibilities of this division are the development of syllabuses and tests, training of secondary-school teachers in educational measurement and of markers for examinations, supervision of the marking of examinations, and conduct of research.

Research projects undertaken so far are:

- A comparison of the performance of students who entered both the Cambridge University O-level and the CXC examinations in 1979 and 1980
- An evaluation of the 1980 CXC examination

Although the Measurement and Evaluation Division is located at the headquarters of the Caribbean Examinations Council in Barbados, its role is regional and includes the entire English-speaking Caribbean. Its potential for research in the area of secondary-school achievement in the Caribbean is enormous. Each year, the Examination Council gathers a great mass of data that, if systematically studied, could yield significant insights into education in the various English-speaking Caribbean countries.

National Nutrition Centre

The National Nutrition Centre began as a research institution related to the University of the West Indies and was supported mainly by grants from international agencies and foundations. Recently, the centre has become a department of the Ministry of Health and Social Security. Although this has given the centre permanence and security with respect to funding, its current institutional status has accorded it a somewhat different character in that its main focus is on service functions with research becoming a minor function.

The current responsibilities of the centre are:

- Providing various community nutrition services, including the training of mothers of low socioeconomic groups in the nutrition of their children;
- Organizing an applied nutrition program;
- Providing training for medical and paramedical personnel involved with child care and nutrition;
- Coordination of the centre's programs with those of relevant government ministries; and
- Conducting research in specific areas of nutrition, including the investigation of the long-term effects of malnutrition on brain

function and educational achievement.

Research projects related to education that have been carried out by the centre are:

- 1969 survey of the nutritional status of children in Barbados
- 1975 survey of the nutritional status of children in Barbados
- Psychometric aspects of early severe malnutrition on brain function and behaviour
- Neurometric aspects of early severe malnutrition on brain function and behaviour

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The centre is engaged in conducting the following projects:

- 1981 survey of the nutritional status of children in Barbados
- A longitudinal study of early severe malnutrition and the subsequent educational achievement of those children in primary and secondary schools

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The centre has been in operation for the past 15 years and has kept detailed records of all the malnourished children who have received treatment from the Queen Elizabeth General Hospital in Bridgetown. Its prevention program, involving the education of mothers, has contributed significantly to the reduction in the incidence of malnutrition in Barbados. The centre is an important resource to any project in education related to the effects of malnutrition on children and possible early stimulation programs to counteract the effects of malnutrition damage.

Institute of Social and Economic Research, Cave Hill

ISER-Cave Hill is the only institution in social sciences or education that is concerned solely with research. The Institute's only responsibility is to do research and so far it has been able to avoid being drafted into service functions.

To date, the Institute has not conducted any research into any aspect of education. The reason given for this is that the Institute conducts research into areas for which it receives grant funding. So far, it has not been requested to carry out any education project. Notwithstanding this record, the director and researchers have expressed interest in pursuing such research in the future.

As far as educational research is concerned, ISER-Cave Hill is an underutilized resource. It has the capability to participate in research related to the interface of education with the social structure and economy of Barbados and the Eastern Caribbean. It also has the capability of conducting policy research related to education.

Support Services

Libraries

Each of the research institutions outside the University of the West Indies has been in the process of creating a small library related to their activities. These libraries represent small collections that are very specific and related to the work of the particular institution and are in embryonic form.

The largest, most sophisticated, and best organized library for research purposes in Barbados is the Main Library of the University of the West Indies at Cave Hill. It has a total collection of about 70,000 books and 10,000 documents (research reports, theses, surveys, and pamphlets) and it subscribes to about 1500 periodicals. Its educational collection consists of around 3000 books and it subscribes to 78 educational research journals. For researchers and the academic staff of the university, the reference service includes bibliographies on request in particular areas, as well as extensive interlibrary borrowing. The areas of education best covered by the existing stock include teaching, educational administration, educational psychology, and testing and measurement.

The Cave Hill library contributes both to the Caribbean Information System for Economic and Social Planning (CARISPLAN) and CARIS INDEX and receives the published indices from these two organizations. Although the University Main Library is the best organized for educational research in terms of its present stock, it is still inadequate to service satisfactorily a vigorous educational research community. One of the reasons why the present inadequacies have not become obvious is that the level of research activity is rather low. There is no educational documentation centre in Barbados.

Computing Facilities

The work of the Curriculum Section of the Ministry of Education does not require the use of computer-processing facilities. The National Nutrition Centre uses the facilities of a private firm on a contract basis. The Caribbean Examinations Council is currently using the government's computing services. Unfortunately in the time available during my visit, I was not able to get detailed information concerning these facilities, except to learn that they are adequate to meet the current requirements of the Measurement and Evaluation Division of the Caribbean Examinations Council. The two research institutions that are part of the University of the West Indies -- ISER and the School of Education -- utilize the services of the Computing Centre of the University. This Computing Centre currently has an ICL 19 01A Processor, which has a capacity of 16 K. The small capacity and slow speed of this machine make it impossible to use the various statistical packages that are currently in use in educational and social science research. Although the machine does have a Fortran compiler, all research done must be related to in-house programing. Again, because the amount of research being done by the School of Education is small, the inadequate capability of the Computing Centre has not been a limiting factor. However, with respect to the work of ISER, in the area of social science and economics, on occasion they have to seek the use of computing facilities outside Barbados. If quantitative educational research of any complexity were done, the present computing capability could not effectively handle the data processing and analysis of such research.

Links to Information Systems

At the moment, there is no existing link to data bases in North America. Two years ago, a portable terminal at the University Main

Library was used to demonstrate the feasibility of access to data bases in the USA. The Caribbean Development Bank is about to install a system that would provide access to the Dialogue System in the USA. For example, it would facilitate the searching of the files of the Educational Resources Information Center (ERIC) in Washington, DC. Arrangements are being made so that researchers on the university campus will have access to this facility; however, the exact arrangements are yet to be determined.

Networks

Although no national network is involved in bringing together primary materials in education and the social sciences in Barbados, the establishment of such a network is now being considered. The University Main Library is a contributor and member of CARISPLAN and CARIS Index.

Funding of Research in Barbados

In discussing funding for educational research, one must distinguish between core funding, which ensures the continuing existence of an institution by providing for its normal yearly operational expenses, and project funding, which supports a particular research activity for a specific period.

The Research and Development Section of the School of Education and ISER receive their core funding from the University of the West Indies. The Measurement and Evaluation Division receives its funding from the parent body, the Caribbean Examinations Council. Both the Caribbean Examinations Council and the University of the West Indies are regional organizations paid for by the governments of the English-speaking Caribbean. The exception is that Guyana, having established its own university, no longer is a contributing government to the University of the West Indies. It is, however, a participating member of the Caribbean Examinations Council. The Teaching Section of the School of Education, Curriculum Section of the Ministry of Education, and National Nutrition Centre receive their core funding directly from the Government of Barbados.

The University of the West Indies, Caribbean Examinations Council, and Government of Barbados provide little more than core funding for educational research. With the exception of ISER, core funding is invariably tied to service functions. Although the core funding permits educational research, it does not provide generous support for it to flourish.

Project funding for research has, so far, gone mainly to the Research and Development Section of the School of Education, ISER, and the National Nutrition Centre. The Measurement and Evaluation Section of the Caribbean Examinations Council is yet to attract funding for research. The agencies that have provided project support include Unesco, UNICEF, CEDO, the Ford Foundation, and the Government of St Lucia. With the exception of the Ford grant to the National Nutrition Centre for its study on the psychometric and neurometric consequences of early severe malnutrition, project support has been for curriculum-development and teacher-education activities. Project support has been short-term, unsystematic, and haphazard. The grants have invariably been small.

Journals

No journal is published in Barbados specifically to provide educational researchers with the opportunity to communicate with each other and the community of educational researchers outside Barbados. In fact, the volume of research being done at the moment would not be sufficient to support such a journal.

However, two journals published by ISER-Cave Hill have editorial policy that would permit research papers on educational topics.

The **Occasional Papers Series** is technical in orientation and is designed for researchers to communicate with researchers. Its focus is the Eastern Caribbean. It is a refereed journal using accepted methods of attempting to ensure quality. So far, it has not published any papers on education although one paper was submitted but not deemed suitable by the referees. It has a circulation of about 200.

Bulletin of Eastern Caribbean Affairs is aimed at the nonspecialist. It deals with current topics and major developments in the Eastern Caribbean. It usually includes abridged versions of research papers either as single articles or in installments. The intention is to give researchers in the social sciences and education a forum through which they can communicate major research findings to the nonspecialist in nontechnical terms. Its circulation is about 250 copies per issue and it is published six times per year. In April 1981, the latest issue was that of September/October 1980.

A third magazine with education content is **Outlook**, which is published by the Barbadian Union of Teachers and circulated to its members who are principals, vice-principals, and teachers in the Barbadian schools. Its editorial policy includes the publication of research findings in nontechnical terms, especially where these would inform and stimulate the thinking of practitioners in the school system. This medium provides researchers with an opportunity to communicate with the educational practitioners in the Barbadian school system.

Constraints

It is possible to identify a number of factors that have constrained educational research in Barbados.

First, competition has existed between research and service functions. The core funding of all educational research institutions has been tied to service functions and staffing of the institution has not been sufficient to allow both functions to be performed adequately at the same time. Because of the immediacy of the service function, the research activities invariably suffer.

Second, Barbados is literally the headquarters of the Windward and Leeward Islands. Having to deal, however, with eight different islands when each is not necessarily pursuing the same goals in the same way presents serious logistical problems. The Research and Development Section of the School of Education has been particularly hampered by this fact. The staff formula that may be adequate for a single government in a single country with one land mass is certainly not adequate in this setting.

Third, funding for educational projects has had a very narrow focus. It has been almost exclusively restricted to curriculum-development concerns. This has resulted in a dearth of activity in other areas.

Fourth, professional communication between researchers working in Barbados is lacking. Researchers tend to have greater professional contact with colleagues in their own discipline outside Barbados than with colleagues outside their discipline within Barbados. Although good personal and social relationships may be maintained, professionally they may be unaware of what each other is really doing and its implications for their own work. There is no sense of awareness of a research community in education.

Fifth, the small size of the country and the intimacy of personal contacts also seem to mitigate against research. The general impression is given that problems can be solved on the basis of common sense and conventional wisdom, that individuals are aware of the problems and their solutions. Empirical inquiry and objective investigation seem somewhat superfluous. Also, because persons are well known to each other, critical questioning of certain matters may be misunderstood, especially where it involves someone else's domain. This is certainly a factor to be considered in policy research.

None of these constraints are overwhelming, insurmountable, or all pervasive. They are factors to be considered in any deliberate exercise designed to develop educational research in this context.

Comments

Educational research in Barbados has a relatively short history, in that its institutionalization began only about 15 years ago. An embryonic infrastructure for an educational research enterprise is in place. There are institutions engaged in educational research, researchers trained to do research, core funding that ensures the continued existence of these institutions, some project funding to promote particular areas of research, support institutions that facilitate the research process, some journals to provide channels of communication, and a climate that gives scope for the pursuit of research. This appears to be reasonable progress over 15 years. There is a growing awareness of the necessity and importance of knowledge generated to inform and instruct action in the local setting. This is surely a positive sign for continued development.

Barbados holds a key position in the Eastern Caribbean. It is the nucleus of that configuration of small nations. Generally, good relationships exist between Barbados and the USA. In addition, personnel with intimate knowledge of the educational systems of these islands are usually located in institutions in Barbados. The development of the educational research enterprise in Barbados must be concerned not only with Barbados itself but also with the seven Eastern Caribbean states.

The stronger research institutions, as well as the institutions with the greatest potential for further growth, are located in the University of the West Indies at Cave Hill. This, coupled with the regional nature of the university and the mandate of the Cave Hill Campus to serve the Eastern Caribbean states, means that any plans to develop and build educational research capacity in this geographical area must include the Cave Hill Campus of the University of the West Indies as a pivotal institutional base.

GUYANA

Guyana is the largest of the Caribbean states territorially but in population it ranks third behind Trinidad and Jamaica. The institutionalization of educational research began in 1966 with the establishment of the Faculty of Education in the University of Guyana. The research capacity now in place has been created over the past 15 years.

Research Institutions

Three institutions in Guyana are engaged in educational research. These are the Faculties of Education and Social Sciences of the University of Guyana and the Ministry of Education. A total of 55 researchers are employed in these institutions.

Faculty of Education of the University of Guyana

The Faculty of Education has five departments that can be grouped as three teaching departments, one Extra-Mural Department, and a Research and Development Department. In describing the research capability represented here, each group must be treated separately.

The three **teaching departments** are: Foundations, Guidance, and Administration; Languages and Social Studies Education; and Natural and Technical Science Education.

The major responsibilities of these departments are in instruction of students in their particular subject areas in the various programs offered by the faculty: these are the Certificate in Education, the Bachelor of Education, and the Diploma in Education. Research is prescribed as one of the criteria to be taken into account for promotion and professional advancement in the university. In these departments, research is, therefore, largely an individual exercise related to the personal interest of the lecturer. The major concern is to produce top-class research that will earn recognition for the researcher concerned. In many instances, the lecturer becomes involved in basic research or in applied research where this relates to some aspect of his or her responsibilities.

Two examples of research done by teaching staff are:

- Effects of advanced organizers, behavioural objectives, and level of questioning on meaningful learning and retention
- Criteria in current use for the education of teaching practice

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Only a minority of the lecturers of the teaching departments are actually engaged in research at present. The major constraint is the lack of time to execute a full teaching program and carry out research projects.

The **Extra-Mural Department** is concerned with university outreach into the community. It is engaged mainly in nonformal adult-education programs. From time to time, the Extra-Mural Department helps to disseminate research findings as these apply to the local situation.

Like the teaching departments, Extra-Mural does not have a mandate to pursue research as a primary activity. Research is done primarily for personal advancement by the staff member concerned.

The **Research and Development Department** was originally established in 1969 through a grant from the Carnegie Foundation. After 6 years, the University of Guyana assumed full responsibility for funding this unit and integrated it into the Faculty of Education. The major functions of the department are to conduct research, disseminate research findings, provide consultancy services to the Ministry of Education, and provide training in research and evaluation techniques to students, teachers, and ministry officers.

Research projects undertaken and completed by this department include:

. The preoccupations of a sample of adolescents receiving secondary education in Guyana

. A statistical analysis of factors in the formal work structure of secondary education in Guyana

. The language of kindergarten and primary school standard one children in Guyana

. The teaching of English in Guyana: A linguistic approach

. Response of a sample of Guyanese students to mathematics as a subject of the school curriculum

. The attitudes of Guyanese students to their schooling at the secondary level

. A linguistic analysis of the written work of Creole-speaking school children in Guyana

. English curriculum for community high schools

. Community high-school mathematics project

At the moment, only one project is actually in progress. It is "Maths Improvement project: An experimental investigation in the use of self-instructional packages." It is geared for teachers in training. A number of papers have been published or are in press. These include "Sex differences in maths self-concept;" "The utility of advanced organizers in mathematics instruction;" "Independent learning;" and "Attitudes and preferences among primary teachers in the teaching of mathematics."

Two projects that are about to be implemented have been funded through grants from the Research and Publications Fund of the university. One aims at producing learning packages for mathematics teachers of CXC in an attempt to improve the level of performance of secondary students in CXC mathematics. The other involves the use of puppetry as a teaching aid in primary schools. Teachers will be taught to make puppets from scraps and other waste materials and the puppets will then be used under experimental conditions to determine their effectiveness as a teaching aid in the Guyanese setting.

The Faculty of Social Sciences, Institute of Development Studies

IDS is the research department of the Faculty of Social Sciences of the University of Guyana. Its major responsibilities are conducting research in the social sciences, providing in-service training for researchers, and teaching 3 hours/week per researcher in the Faculty of Social Sciences. The institute also disseminates research results through its journal, **Transition**.

Research projects that have been undertaken and completed by IDS include:

- Levels of living in Guyana
- An examination of public enterprise in Guyana
- Labour mobility in Guyana
- The sugar industry in Guyana
- Caribbean Technology Policy Project: Phase I

IDS is currently engaged in the "Caribbean Technology Policy Studies: Phase II," as well as being jointly engaged in monetary studies with ISER at the University of the West Indies. IDS will soon be undertaking the monitoring and evaluation of the "Black Bush Polder Scheme" in Guyana.

International agencies that have assisted the work of this institution include IDRC, the International Labour Organization (ILO), and the Central Bank of Guyana. To date, IDS has not undertaken any projects within education. However, the director has stated that this is not out of lack of interest but because no funding has been attracted for such purpose.

Ministry of Education

There are three units within the Ministry of Education whose activities include educational research. These are the Test Development Unit, the Research Unit, and the Curriculum Unit.

The major responsibility of the **Test Development Unit** is the development of tests for the following examinations: Common Entrance for High School, Secondary-School Proficiency Examinations, Pupil-Teacher Examinations, Nurses and Police Recruitment Tests, and Examinations for the Guyana Technical Institute.

In addition, the unit moderates papers for Teachers' College final examinations, writes reports on the performance of students in these examinations, marks examinations, and mounts workshops in testing for teachers.

Research projects carried out by this unit include:

- Predictability of Common Entrance for performance of first formers of high schools
- Item analysis of tests used by the Development Unit

The unit is currently considering the development of a new aptitude test to replace the current one and is carrying out investigations related to this goal. About 5% of the time of the unit is spent in research and the remaining 95% is related to test-development activities. This unit generates a lot of data and the personnel in the unit have the capability to analyze it. However, because they are pressed for time in carrying out their other responsibilities, they are not in a position to analyze the data. Another constraint is that the computer facilities used by the

Ministry of Education are in Linden, which is about 68 miles away, and are expensive to use because they belong to Guymines Limited.

The unit has been assisted in its work by the Educational Testing Service of Princeton University.

The **Research Unit** of the Ministry of Education has, as its major responsibilities, conducting of research, dissemination of research results, conducting seminars and workshops in remedial education for teachers in the system, and giving supervision and advice to university students doing research in schools. Educational research occupies 90% of its time.

Projects carried out by the unit include:

- Social values of secondary-school children
- Attitude and achievement of Form 3 students
- Community high-school tracer study, 1977 and 1978
- Remedial teaching package for in-service teacher-training program
- Experiment in remedial education and exploratory study in the use of students and tutors

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Research currently in progress includes:

- Evaluation of guidance in schools in Guyana
- Community high-school tracer study of 1979 graduates
- Validation of secondary-school proficiency examinations to replace the preceptor's examinations
- Evaluation of the proficiency examination in Guyana in conjunction with the Caribbean Examinations Council

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Agencies that have assisted the work of this unit include the United Nations Development Programme (UNDP) and Unesco. No new projects are being considered at present. Although the unit has been in operation since 1976, it is not recognized as a department of the ministry by the Public Service Ministry and the Ministry of Finance. Efforts are being made, therefore, to consolidate the existence of the unit to give it formal place in the Ministry of Education. Currently, it is staffed by teachers on secondment from their jobs in schools.

The major function of the **Curriculum Unit** is developing curriculum and materials in all subject areas for all levels of the educational system from early childhood and kindergarten through to teachers' college. The unit was established in the early 1970s. At the outset, it concentrated on primary curriculum but at present it has responsibilities for the entire educational system outside the University of Guyana. The other major functions of this unit are to provide in-service training for teachers using new curricula or new materials in the school, monitor the schools with respect to the implementation of new programs, collaborate with the Test Development Unit in the process of setting the various examinations in the different subject areas, and evaluate the effectiveness of the new curricula and materials introduced in schools.

On the occasion of my visit to Guyana, the senior officers of this unit were not in the country. Thus, I was unable to get details concerning the various research projects that have been conducted by the unit over the years because many of these projects were conducted in the 1970s. What has been confirmed is that the Curriculum Unit did vital research and carried out a number of projects during the 1970s. Up to the time of compiling this report, I have not been able to obtain the detailed information concerning these projects.

Support Institutions

University Library

The Library of the University of Guyana is the only library in Guyana catering to educational research. The total collection consists of about 150,000 books, around 10,000 documents (research reports, theses, surveys, and pamphlets), about 1250 periodicals, and audio-visual materials (372 tape recordings, 150 records, and 250 maps). Microforms include 520 microfilm reels and 141 microfiche cards. Of this, the educational collection consists of about 7800 books, 125 documents, and 104 periodicals, most of which are research journals. There are only three audio-visual teaching kits, and there are no microforms or computer materials on education in this library.

The Faculty of Education and IDS both have access to the library because they are part of the university. The Ministry of Education has a special arrangement that allows the education officers in the three units concerned -- Curriculum, Test Development, and Research -- to have access to the material of the Library of the University of Guyana. The fields that are well covered are educational psychology, psychometrics, and history of education.

Computer Facilities

Researchers in the three research institutions now obtain data-processing assistance from two computer facilities: the Ministry of Finance computer at Main Street, Georgetown, and the Guymines Computer Centre at Linden.

A computer centre that is planned for the university campus will belong to the National Data Management Authority. The buildings are now being completed, the machines have been purchased, and it was expected that they would be installed and operational by August 1981.

The Ministry of Finance computer is an IBM Systems III machine with 128 K capacity. It has three disc drives, two tape drives, and one line printer. The clients are mainly government ministries, the University of Guyana, the Mortgage Finance Bank, the Police Force, and the Guyana Defence Force. The machine is rented from IBM. It is mainly oriented to business operations. It has Fortran IV, Cobol, and RPG compilers, but only about 1% of the operational time of this machine is used for educational research. No statistical packages are available so that any program run on this machine for educational research is developed as an in-house exercise and designed specifically for the particular project.

The computer at Linden is an IBM Systems 370 Model 115 unit with 384 K capacity. It has disc drives, tape drives, line printers, diskette readers, and terminals. It is also adequately staffed with systems analysts, programmers, operators, and key punchers. Again, however, there are no statistical packages, for example SPSS, and such programs as exist for educational research were developed in-house for particular projects.

The computer for the Data Management Authority, which will be located at the University of Guyana, will also be an IBM 370 Model 115 with 384 K capacity. It will have six disc drives, two tape drives, one line printer, one diskette reader, one card-punch reader, and a card reader that includes an attachment to read mark-sense cards. It will also have six terminals. It will have statistical packages including SPSS and the IBM package called STATS PACK. It is expected that this new facility will better serve the needs of the educational research institutions, which are all located in Georgetown. It will therefore reduce considerably both the distance and the expense of having materials sent to Linden for processing. With the development of this new facility, educational research in Guyana should not be constrained by computing capacity.

Journals

Four journals are currently being published in Guyana to transmit research findings in education to various audiences.

Release was started in early 1978. The latest issue is Volume 8 and 9 of 1979, a double issue. The journal receives its financial support from sales and advertisements. The editorial policy, as expressed in the first issue, states:

> There are few magazines on the shelf; few are local. **Release** is an attempt to fill the void. It attempts to transcend narrow political structures, to focus on cultural and intellectual affairs, and will try to forge unity. It will try to be rich in content, broad in perspective, and enlightening in scope. The articles published will range from the artistic to the scientific, from the social to the technical. It exists for the author who has something substantial to say directed to a wider reading public.
>
> It will not attempt to be over-intellectual but preference will be given to articles that are based on reasoning and empirical evidence. The journal will focus specifically on Guyanese and Caribbean issues.

In its first issue, it contained an article titled "Education in Latin America, with special reference to Guyana." This article attempts to compare the Guyanese educational system with the rest of Latin America.

Release aims at the articulate and educated reading public. It is not technical and therefore deals with issues and ideas in a wide range of subject areas including education.

The **Guyana Journal of Sociology** is published by the Department of Sociology of the University of Guyana and the Guyana Sociology Society. It has a circulation of about 500. It started publication in 1976 and the latest issue is Volume 2 (No. 1) of 1981. The aim has been to produce two issues per year but so far this has not been the case. The main subscribers are academics and students, local and overseas, as well as overseas libraries. The journal focuses on articles based on original research in the field of social policy and planning. Its orientation is empirical and it avoids philosophy and polemics. Its editorial policy allows for the publication of articles in the field of education. It is funded mainly through sales but the Department of Sociology advances the money for the production of each issue. This is then reimbursed after sales of each issue. Educational research articles that are published in this journal are expected to relate to the social aspects of education and not merely to pedagogic issues.

Transition is published by IDS and has a circulation of about 1400. It started publication in March 1978 and the latest issue is Volume 3 (No. 1) of 1980. The objective is to publish four issues per year. The editorial policy is that it will contain articles that are both empirically based as well as polemical. The editorial policy permits the publication of articles in education and the latest issue had three education-related papers out of a total of eight.

Forum is published by the Research and Development Department of the Faculty of Education and it began publication in 1976. Although it went through a period in which no issues were published, one is currently in press. Its circulation is about 500. This journal is aimed at providing an outlet for educational researchers in Guyana to convey their research findings to practitioners in the field, mainly classroom teachers and principals of schools.

Thus it can be seen that all the efforts and the publication of research findings to various audiences have come within the last 5 years. These journals are all in the initial stages of establishment, they have not been able to keep up to their target of issues per year, and almost all are behind schedule. To be optimistic, a start has been made; however, one cannot be sure that these journals will in fact remain in publication. The three university-based journals have support from the various faculties in which they are located. **Release**, however, is a commercial venture. In all instances, it is the commitment and the continued interest of the individuals concerned that will ensure the success of the journals as they are all published using unpaid, part-time assistants.

Funding

The educational research enterprise in Guyana is almost totally locally supported with respect to both core and project funding. Although the Research Department of the University of Guyana started from a foreign grant in the years 1969-75, since 1976, it has been the total responsibility of the University of Guyana. At the moment, that department is not being assisted by any foreign agency. Core funding for the Research Unit of the Ministry of Education is provided by the Guyanese Government as is most of its project funding, with the exception of two small grants from international agencies.

Looking at this spectrum of funding, I think it fair to say that there is a good deal of local support for educational research and this manifests itself in practical terms. It is probably for these reasons that most of the research done is applied research related to national concerns. However, it is fair to say that the amount of funding provided for educational research is quite small. This places great limitations on the scope of work that is possible. The projects that have been undertaken are all small scale and are largely restricted to research methodologies involving paper-and-pencil techniques. With a greater level of financial support, the same number of researchers and the institutional arrangements could accomplish much more.

Over the last 2 years, the Research and Publications Fund of the university has been significantly increased and there have been faculty grants for research. Although these are quite small, the university clearly intends to stimulate research as far as possible within the resources available.

Training in Research

In 1976, the University of Guyana in conjunction with the Ministry of Education launched a Master's Degree in Education program that produced 24 graduates. This was a specially tailored program designed to meet the personnel needs of the Ministry of Education at that time in the field of curriculum development, test development, and research. The program lasted for 2 years. A detailed description of it is reported in the chapter dealing with training in research in the Caribbean.

Constraints

Six major constraints influence and affect educational research in Guyana at present.

Although it is extremely difficult to measure an attribute such as morale, one senses that there is a low level of morale in the educational community, the Ministry of Education, and the University of Guyana. The uncertainty of the status of the Research Unit of the Ministry of Education, for example, has certainly contributed to the low morale of the members of that unit. In the university, on the other hand, there may be several contributing factors including the present posture of confrontation between some university academics and the government. Salary levels at the moment are quite low and this could also be another contributing factor. One consequence of this low level of morale is a loss of enthusiasm and in some instances interest.

The "Brain Drain" is a continuing problem. Both the Ministry of Education and the University of Guyana have had generous study-leave arrangements allowing for staff to go abroad for training at the postgraduate level. In many instances, persons who have gone abroad for training have not returned after completion of their courses of training. This has meant the loss of many senior personnel with a good deal of experience in educational research and the kind of stature and status within the society that would enable them to provide immediate leadership in educational research and other areas. It is not easy to replace persons of such experience and expertise.

International funding is at a low level. At the moment, apart from two small grants -- one from Unesco and the other from UNICEF -- no other projects in education are receiving any international support from an aid agency. The grants currently in existence are small and are of necessity to projects whose concerns are quite limited. With the current economic constraints being experienced by the Guyanese society and the Government of Guyana, the funding available for educational research is quite small. If international support for educational research were greater, the level and quantity of such research could increase significantly.

Links do not exist between any organization in Guyana and computer data bases of the major information systems. When researchers require searches on various topics, they have to write to friends and former colleagues abroad for such services. Similarly, there are no existing networks that attempt to gather primary source materials in Guyana. The absence of a developed information system within Guyana and of links to information systems abroad constitutes a serious drawback in the conduct of research.

Many of the source documents for educational research are official documents of the government. At the moment, confidentiality barriers limit, to some extent, the circulation of documents or the dissemination of certain information. This is also an inhibiting factor.

Several of the persons engaged in educational research have many other duties: these include teaching, administration, or some other service functions. These other duties seriously reduce the time that they can devote to research. In a sense, their research skills and expertise are underutilized because of their other duties and responsibilities.

Discussion

Educational research in Guyana has been established over the past 14-15 years. Over this period, it has become firmly consolidated in the Guyanese society by the establishment of the Research and Development Department in the University of Guyana and the Research Unit in the Ministry of Education. There are, at present, about 55 trained social scientists who are interested and willing to participate in educational research. They are employed at IDS as well as the Sociology Department of the Faculty of Social Sciences. The areas of strength are measurement and evaluation and curriculum development.

Apart from having a reasonable number of persons engaged in educational research, it is heartening to observe that both core and project funding for educational research is being provided from local sources. This indicates indigenous interest and commitment to educational research. With the exception of the provision of links to information services and networks, attempts have been made to put into place all the elements of the necessary infrastructure. These include library facilities, data-processing capability, journals for dissemination of research results, and training for researchers. Although none of these in themselves is totally adequate, the fact is that the linkages have been made and the infrastructural support has been established.

A fairly sizeable number of research projects have been carried out over the last decade. These projects range from basic research in linguistics to applied research dealing with the ways by which the teaching of mathematics can be improved in teachers' colleges. The weaknesses of the present educational research enterprise lie in the absence of links to information systems, the low morale that is general in the academic community, the absence of a professional association to bring researchers together, and the present low level of funding for educational research projects. The current situation would be greatly improved if there were international recognition of the foundation that has been laid and one or two substantial grants made for large-scale projects that attempt to tackle some national issues. If such projects were spread between the ministry and the university, thus requiring pooled efforts, it would probably also have the effect of helping to integrate the research capabilities.

BELIZE

With respect to educational research, Belize is in much the same situation as the Eastern Caribbean states. The infrastructure necessary for the support research in general and educational research in particular is not in place. The library services that exist serve the general reading public: there are no specific provisions for researchers. There are no computer centres, no links to computer data bases, no information networks, and no research institutions currently in existence. As in the Eastern Caribbean states, there are Belizeans who have been trained to do educational research. Such research that has been done in Belize has been done by graduate students pursuing master's and doctoral studies. Those Belizeans trained to do research are employed in teaching positions in schools, in teacher-training institutions, and in the Ministry of Education in administration and supervisory positions.

The major point of difference between Belize and the Eastern Caribbean states is that Belize is only in the process of establishing the Belize College of Arts, Science, and Technology (BELCAST), which will include research as a part of its mandate. Belize, therefore, plans in the foreseeable future to give research an institutional framework within which to operate.

Currently there are two journals published in Belize that include articles on education. These are the **Journal of Belizean Studies**, circulation 1100, and the **Journal of Belizean Affairs**, circulation 500.

Belize is developing elements of the infrastructure necessary for educational research. Although these are still in the early stages, if the plans are implemented successfully, Belize should have a functional educational research capability within a decade.

Belize is the only English-speaking country in Central America. Because of its contiguity with Spanish-speaking states, it is the most bilingual of the Commonwealth Caribbean countries. Belize achieved political independence in 1981 but still has a strong British military presence because of border disputes with Guatemala.

Belize is a member of most of the regional institutions serving the English-speaking Caribbean. These include the University of the West Indies, CARICOM, and the Caribbean Development Bank. Like the Eastern Caribbean states, Belize is a noncampus country in which the University of the West Indies' presence is maintained by a Resident Tutor of the Extra-Mural Department in a University Centre.

EXISTING RESEARCH CAPACITY: JAMAICA, TRINIDAD, AND REGIONAL PROJECTS

In this chapter, the description of the educational research capacity of the English-speaking Caribbean is completed by looking at Jamaica, Trinidad, and the Regional Projects and Institutions outside the University of the West Indies. In terms of population, Jamaica and Trinidad are the largest English-speaking Caribbean countries. The educational research enterprise is more firmly established and better organized in these two countries than in the rest of the region.

JAMAICA

The institutionalization of educational research in Jamaica started in 1952 with the establishment of the Department of Education of the University of the West Indies. For this reason, educational research began in Jamaica at least a decade before any other Caribbean country.

With a population of 2.1 million, Jamaica is the largest of the English-speaking Caribbean territories. Its population constitutes about 45% of the English-speaking Caribbean. Although still a small country, the intimacy of contact is not as close as in the other territories. It is large enough for some impersonality to exist. For example, persons in the Ministry of Education need not know educational researchers in the School of Education and vice versa. From the above, it is not surprising to find that Jamaica has the largest and most dynamic educational research enterprise of the English-speaking Caribbean states.

Educational Research Institutions

Seven institutions in Jamaica are engaged in one way or another in educational research, and about half of them are based on the university campus at Mona.

School of Education, Mona

The School of Education consists of three sections: Teaching, Teacher Education Development, and Research and Higher Degrees.

The major responsibilities of the **Teaching Section** are: teaching courses for the Certificate in Education, Bachelor of Education, and Diploma in Education; providing consultation to government, regional organizations, and schools; and carrying out research.

The research done by this section is mainly on an individual basis related to personal advancement in the university. However, because of the expertise that resides within this section, various organizations have contracted research to individual members or groups of members in the section. These organizations include such bodies as Unesco, UNICEF, Ministries of Education, and companies.

Over the 28 years that this section has been in operation, lecturers have carried out numerous research projects. The following lists some of the projects completed by present members:

- Field-work techniques for teachers of geography and social studies
- The rainfall of Jamaica: A self-instructional case study for sixth formers
- A survey of sixth-form geography in Jamaica
- A survey of the home experience of a sample of Dominican children prior to entry to preschool
- Caring and rearing of West Indian children in the first 2 years of life
- A study of lower-class Black families in Jamaica with emphasis on their influence on the development of preschoolers
- Performance of Caribbean candidates in the A-level special papers in West Indian history, 1970-76
- A survey of the extent of teaching for development in schools
- Sex bias in the curriculum of secondary schools and teachers' colleges
- A survey of provision for nonformal education in Guyana and the relationship to the prevailing ideology
- Evaluation in Jamaican teacher training: A model for situations with fundamental constraints
- Democratization of education: A model for curriculum management in secondary schools in the West Indies
- Testing and implementation of Unesco nutrition education curriculum planning and evaluation guides
- Environmental education strategies for curriculum development
- A model for teaching standard English to dialect speakers
- Children's language in Jamaica
- The language materials workshop: Producing educational materials in English for Grades 1-3 and 10-11, and teachers' colleges
- Social class, language, and communication in Jamaican children

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The following projects are being carried out by members of the Teaching Section:

- Teaching problem solving in mathematics at the sixth form
- Development of a Grade-6 achievement test for mathematics
- The effect of question wording on performance in history
- The contribution of Enos Nuttall to education in Jamaica
- Teaching the concept of time to age group 6-12 years
- Education for modernization and self-government, 1938-57
- Assessing the readability of some science textbooks used by Jamaican secondary-school children
- Test of reading readiness for beginning reading
- Using discourse analysis in describing performance on close packages
- School/community relations: An experimental project
- Professionalism in teaching: Differences in views among student teachers
- Identity in the English-speaking Caribbean
- Dread talk: The speech of Rastafarians in Jamaica

- Styles of communication in Jamaican Creole
- Factors affecting performance in A-level geography
- Relationship between lifestyle and achievement
- A longitudinal study of personality, education, and environmental variables as they relate to academic success in high school and university

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Clearly, members of the Teaching Section have established a creditable record in research even though their major responsibility is teaching. The organization of the Teaching Section is such that staff teaching load is kept usually to 10 contact hours/week. Members of the section serve on various committees of the Ministry of Education, the Teachers' Organization, and School Boards. In addition, many are involved with the Caribbean Examinations Council in the development of their various syllabuses in the several subject areas. Notwithstanding these activities, most members of the Teaching Section find time to do research.

Their major source of funding is the Research and Publications Fund of the University of the West Indies and the Consultancy Fund of the School of Education, Mona. Persons obtaining contracts to provide consultancies to various organizations are required to pay 15% of their fees to the Consultancy Fund. All members of the school are eligible to apply to this fund for grants that would facilitate attendance at conferences, seminars, and workshops, as well as execution of research projects. In addition, the reputation developed by various members of the section has enabled them to obtain grants or contracts from agencies and organizations to carry out research.

Not all members of the Teaching Section are involved in research. Some are currently enrolled in the doctoral program and are concentrating their efforts on their theses. The others are simply not motivated, for one reason or another, to do research.

The major responsibilities of the **Research and Higher Degrees Section** are to: carry out research contracted to the School of Education by various organizations; undertake teaching and supervision related to the master's and doctoral programs of the School of Education, Mona; offer consultation to governments, regional organizations, and colleges; supervise and teach the Bachelor's and Diploma in Education programs being followed at the College of the Bahamas; and participate in community outreach programs. About 60% of the time of this section is devoted to research.

This is the most recent section in the School of Education, established in 1973. For several years, it had only one full-time member of staff, the head of the section; others worked in the section on a part-time basis. However, over the last 5 years, the section has grown steadily and now has a complement of seven researchers.

Projects carried out and completed by the section are:

- Evaluation of reading in new secondary schools
- Study of certain psychosocial factors in teachers' colleges
- The child-development project
- Maths curriculum development for teachers' colleges
- The test-development project for primary and secondary schools

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Projects in progress include:

. Evaluation of the shift system in Jamaican schools

. Urban/rural differences in the school system in Jamaica

. Curriculum development in primary schools: An integration of science and language arts

. Project in test development: Tests to measure concept development of children from deprived environments

. Strategies for improving concept development among 6-year-olds from deprived environments

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Projects in progress have been funded within the unit by UNICEF, IDRC, and the Government of Jamaica. The section is currently discussing a number of projects with various organizations, but definite plans have not been finalized.

As its name implies, the Research and Higher Degrees Section is responsible for the higher degrees program of the School of Education, Mona. Currently there are 123 students registered in the master's program and 15 in the doctoral. Although members of both the Teaching Section and the Teacher Education Development Section assist with the supervision of master's and doctoral students, the burden of the responsibility resides with the members of this section. Supervising 10 students at the doctoral or master's level, carrying a load of teaching in the coursework section of the program, and carrying out contract research constitute a heavy load. One of the results of this is that projects take longer to complete than would normally be the case.

Another constraint in this section is that it does not always have all the expertise required to execute a particular project and sometimes finds it difficult to obtain suitable qualified persons for short-term assignments.

Major tasks and responsibilities of the **Teacher Education Development Section** are: taking responsibility for the development of curriculum and syllabuses for the 14 teacher-training institutions in Jamaica, the College of the Bahamas, and the two teacher-training colleges in Belize; moderating teachers'-college examinations; externally assessing teaching practice in the teachers' colleges in the Northern Caribbean; offering consultation to government in teacher education; conducting research in teaching and teacher education; and organizing programs of staff development for the staff of teachers' colleges.

Research projects that have been undertaken by this section are:

. The teacher internship program: Analysis of some of the reactions of interns

. Evaluation of the in-service teacher education thrust, 1976-77

. Personality tests and teacher-selection research project

. Authoritarianism in Jamaica's teachers' colleges

. Experiments in individualized instruction at a Jamaican teachers' college

. Development of mathematical placement tests for teachers' colleges

- Teachers' college validity study
- Assessment of reading achievement at Grade 6 level in the primary school
- Early childhood project
- The perception of teachers'-college students of teachers' colleges

Research projects in progress are:

- Development of an instrument to assess teaching by teachers'-college students in the primary school
- Empirical investigation of a model of staff development
- Development of perspectives and attitudes by students during the third year at teachers' college
- Children's use of language, graphic, and other cues in learning to read
- Correlation between intelligence-test scores and creative-thinking tests among primary and secondary students

The section is currently contemplating undertaking a study of teaching in Jamaican schools, utilizing classroom-observation techniques. It is expected that all members of the section will be involved in this project.

The three sections of the School of Education together employ a total of 45 professionals, all of whom have been trained in educational research. Of these, 18 hold doctoral degrees, 21 master's degrees, and the other 6 have qualifications just below the master's level. In terms of number, range of skills, and the level of training, the School of Education, Mona is the largest single entity of trained educational researchers in the English-speaking Caribbean. It has developed a sound record of achievement in educational research having successfully completed numerous projects. Some members of the school, for example, Professor Dennis Craig and Professor Laurie Reid, have achieved international recognition for the quality of the work that they have done in their respective fields. However, there are weaknesses and shortcomings, primarily in the areas of experimental research, classroom observational research, policy research, and studies relating to social and economic aspects of education.

Medical Research Council Laboratories, Jamaica

The Medical Research Council Laboratories, Jamaica, is a part of the Medical Research Council of Britain. It is one of only two research units of the council operating outside Great Britain. As its name implies, its major research emphasis is in the medical field. Over the years, however, this unit has been doing research related to education. One of its early projects studied the heights and weights of Jamaican school children and also the age of onset of puberty. Although this project concentrated on the physical and physiological aspects of human growth and development, it did consider social and educational factors.

More recently the unit has been concentrating almost exclusively on research on sickle-cell anemia, a disease that is prevalent in sub-Saharan Africa and is quite widespread among people of African ancestry. As in the case of the earlier project, the unit has not limited its work only to the clinical and curative aspects of the disease but has also undertaken studies related to the social and educational aspects.

Studies related to the educational and social aspects of the disease undertaken by this unit are:

- Psychosocial aspects of sickle-cell disease
- Social effects of leg ulceration in sickle-cell anemia
- Awareness of sickle-cell disease among high-school students in Kingston, Jamaica

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The unit has a comprehensive data bank of all known cases of sickle-cell anemia for all age groups in Jamaica. It also has a complete clinical record of these persons. With this as a starting point, it would not be difficult to mount a number of projects related to the implications for education for children suffering from this disease. These studies would have implications not only for Jamaica but also for all countries with a significant Black population, especially those in the Third World.

About 10% of the Jamaican population are carriers of the sickle-cell trait and probably 2% are full sicklers. There is no known cure for this disease and it is characterized by crises during which the patient needs to be hospitalized. This disease affects the level of hemoglobin in the blood so that the person involved is always short of oxygen. Because of the physiological characteristics of this disease, factors such as the distance of home from school may significantly affect the school attendance of full sicklers even during times when they are normal. Another aspect of the disease is leg ulceration. The ulcer appears for some time and does not respond to treatment. Where parents keep the child at home with the ulcer or teachers and peers are unwilling to accept the child because of the ulcer, again significant time can be lost from school. Several other aspects of the disease have implications for education.

The Medical Research Council Laboratories, Jamaica, is one of the few research centres in the Third World studying this disease. Its facilities provide a unique opportunity for studying the educational implications of this disease.

Tropical Metabolism Research Unit

The Tropical Metabolism Research Unit is a part of the Faculty of Medicine of the University of West Indies. Its major responsibilities are: research in metabolism, teaching of courses in the Faculty of Medicine, providing clinical services, and providing consultancy services in research to other university departments.

Within the unit, mainly under the leadership of one member of staff, research has been undertaken in the area of malnutrition and its implications for education. This research has been funded by the Jamaican Government and some international agencies. A small section has been built up consisting of one medical practitioner specializing in nutrition research and three nutritionists trained to the master's level.

Studies that have been undertaken by this section of the Tropical Metabolism Research Unit are:

- Child rearing in Kingston
- Social background of malnourished children
- Relationship between nutrition, attendance, and school achievement
- Effects of school feeding on nutrition and school achievement
- Child-to-child intervention program in a rural school
- Mental development of malnourished children and the effects of increased stimulation
- A community study of developmental stimulation
- Development of curriculum materials for children under 4 years

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Projects being planned for early implementation are:

- Hunger and school performance
- Family support of basic-school children
- Developmental levels of Jamaican children and their relationship to class, rural/urban background, and sex

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The Nutrition Education Section of the Tropical Metabolism Research Unit has carried out some interesting research that has yielded very promising results. The earlier projects identified a relationship between nutrition, attendance, and school achievement that has been demonstrated in other parts of the world: that is, poor nutrition affects attendance negatively and this in turn reduces school achievement. However, the section has gone beyond this result to develop experimental intervention programs. They have developed community-based early-stimulation programs that seem to indicate that the negative developmental impact of malnutrition has been at least arrested if not reversed. The unit has also started to develop curriculum materials for the early-childhood level.

One of the constraints operating in this setting is that this unit is not in the mainstream of the educational system. Thus, in some respects, access has been limited and collaboration and articulation are missing. For example, children who have benefited from the early stimulation program before age 4 and who moved into a basic school are not likely to continue the program developed by the project. The section has no authority and little relationship with those operating the basic-school program to b gin to have them alter their own materials so that there is continuity in the education of the child.

Although this section of the Tropical Metabolism Research Unit has done some very interesting research, it is not widely known within educational circles nor are the implications widely appreciated. The unit has been preoccupied with the actual execution of its research projects. Publication of their work has been largely in medical journals, which are not read by the educational community. Therefore, dissemination of the research findings of this project to the educational community in Jamaica is a problem. Again, because the research results are not disseminated and are not well known within Jamaica, it is unlikely that it will have immediate impact upon policy.

The Institute of Social and Economic Research, Mona

ISER-Mona, like its counterparts in St Augustine and Cave Hill, is set up to conduct research into matters of a social and economic nature. The major responsibilities of the ISER are conducting research, disseminating research results, evaluating internationally funded projects, doing feasibility studies especially in the LDCs, providing consultancy services to governments and other organizations, and teaching 3 hours/week in the Faculty of Social Sciences, Mona.

Research projects completed by ISER-Mona from 1979 to 1981 are:

- Caribbean technology policy studies
- Caribbean public enterprises
- Family planning in Jamaica
- Small-farm enterprises in Jamaica
- Effect of migration on rural-development policies in Jamaica
- Study of Jamaica's bauxite negotiations
- Study of bauxite/alumina within a conceptual framework for improving the structure of world trade in primary commodities
- Veterinary manpower survey
- Students' off-campus accommodation
- Ownership and control of resources in Barbados, 1834 to present
- Trend in social-work practice and research
- Communications and other socioeconomic indicators in the planning process in Jamaica
- Small-scale nonfarm sector in Jamaica
- Real exchange-rate variations on CARICOM: Implications for currency unification

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Research projects in progress are:

- Off-farm development and finance
- Impact of bauxite industry on rural communities in Jamaica
- Caribbean regional program of monetary studies
- Impact of tourism in Jamaica
- The informal economy
- Wage/labour migration
- Perceptions of Caribbean women, 1938 to present
- Levels of dependency in the English-speaking Caribbean
- International monetary issues affecting Caribbean economic policy

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Agencies that have supported the work of the unit are the Ford Foundation, the Inter-American Foundation, ILO, IDRC, United Nations Institute for Training and Research (UNITAR), Lever Hume Trust, Swedish Agency for Research Cooperation with Developing Countries (SAREC), the Norwegian Agency for Research and Development, and the International Peace Research Institute.

ISER-Mona publishes the internationally recognized journal, **Social and Economic Studies**, and **The Working Paper Series**. It has its own documentation centre and library, which is one of the resource centres for reference materials in social and economic studies. Although members of ISER-Mona have carried out projects related to the educational system, it has not been a major activity of the Institute. However, many researchers at ISER-Mona have expressed interest in collaborating with educators in multidisciplinay projects that examine the social and economic interrelations of education.

Ministry of Education

Five units or sections of the Planning and Development Division of the Ministry of Education have work involved in educational research. These are the Planning Unit, Testing and Evaluation Section, Core Curriculum Unit, Technical and Vocational Education Unit, and Research Section.

The major responsibilities of the **Planning Unit** are planning educational development for the entire educational system; collection, storage, retrieval, analysis, and publication of educational statistics; preparation and coordination of projects; and conducting surveys and research in the various aspects of the educational system for planning purposes.

Projects that have been undertaken by this unit include:

- The education sector survey, 1973
- A survey of remote rural primary and all-age schools in Jamaica
- Educational opportunity at the primary and secondary levels in Jamaica as distributed by parish
- Public educational institutions at the first and second level in Jamaica

On an annual basis, the Ministry of Education publishes "A directory of public educational institutions in Jamaica" and "Educational statistics."

Projects that are currently being planned and will be implemented in the near future are:

- Microstatistical, economic, and sociological aspects of the Jamaican educational system
- The school mapping project

About 30% of the time of the Planning Unit is devoted to research activities. The major constraint on this unit in doing educational research has been personnel. There are several vacancies at the moment, primarily because government is not able to compete with the private sector for the level of skill required, especially for persons in the areas of systems analysis, economics, and statistics.

The responsibilities of the **Testing and Evaluation Section** are test development, setting and marking of the Secondary School Certificate (SSC) examinations, monitoring the continuous-assessment aspect of SSC examinations, conducting studies of the ministry's examinations and of student performance, and offering in-service training to principals and teachers on the subject of testing and evaluation.

Projects that have been undertaken by this section are:

- Comparative analysis of the performance in the CXC and SSC examinations in English language and mathematics
- Investigation into the examinations conducted by the Ministry of Education

Studies that are currently in progress are:

- Comparative study of performance in the GCE and SSC examinations in English language and mathematics
- Comparative study of performance in the GCE and CXC examinations in English language and mathematics

Projects that are being contemplated by this section are:

- Examination of the performance of students in the Grade 9 achievement test and their performance in the GCE examinations
- Comparison of the performance in GCE examinations of children entering high schools via the Grade 9 achievement test and the Common Entrance examination routes

The major responsibilities of the **Core Curriculum Unit,** which was established in 1974, are: development of curriculum for primary and secondary schools, in-service training of teachers in new curricula and in innovative approaches, material development, and providing consultancy services to other sections of the Ministry of Education and schools.

Projects that have been undertaken and completed by this section are:

- Consumer economics program for secondary schools
- Primary reading projects Grades 4 to 6: Phase I
- Primary science project: Phase I

Projects currently in progress are:

- Primary reading project: Phase II
- Primary science project: Phase II
- Spanish in secondary schools
- Training of teachers in mathematics
- Multinational project in scientific literacy
- Localization of curriculum in six rural primary schools
- Test development in reading and mathematics for Grades 3 and 6
- Project Primer: A modular approach to curriculum organization in five rural primary schools

The unit is currently planning to undertake a curriculum-development project in the area of family life education. About 50% of the time of this unit is spent in research activities related to curriculum development.

The major responsibilities of the **Technical and Vocational Education Unit** are: program development in technical and vocational education, development and implementation of curriculum in technical and vocational schools, test development for technical and vocational areas, evaluation of programs and projects in technical and vocational education, supervision of technical and vocational schools, and in-service training of teachers.

The Technical and Vocational Education Unit of the Ministry of Education was established in 1975. Only about 20% of its time has been devoted to curriculum development and research. Only one project has been undertaken and completed by this unit: "The schools' production program with special emphasis on agricultural production." This project was an attempt to find out if schools could operate viable economic production units as part of their training activities. The Testing and Evaluation Unit, in conjunction with the Research Unit, are in the final phases of evaluating the achievements of this project. The Technical and Vocational Education Unit is currently considering a new project for which it hopes to obtain the assistance of USAID. The new project will be titled "The Jamaican project on production" and it will focus on production in agriculture, art and craft, industrial education, and home economics.

The **Research Section's** major responsibilities are conducting educational research, management and monitoring of research contracts to organizations such as the University of the West Indies, providing consultancy services to other sections of the ministry and to teachers' colleges and schools, and evaluation of projects executed by the Ministry of Education.

Projects that have been undertaken and completed by this section are:

. Vocational tracer study of 1976 graduates of new secondary schools

. Survey of handicapped children in Jamaican primary schools

Research in progress includes:

. The school attendance survey
. Vocational tracer study of 1979 graduates of secondary schools
. Vandalism in primary and all-age schools
. Aptitude testing for secondary schools
. School boards and their operations
. Competency-based education

The unit is currently monitoring the following projects that have been contracted to other organizations:

. Evaluation of the shift system (Research and Higher Degrees Section, UWI)

. Rural and urban differences in education (Research and Higher Degrees Section, UWI)

. Value orientation of urban ghetto communities (Mel Nathan Institute)

. The transitional school project: An experiment in curriculum organization (St Hilda's High School)

The Research Section is currently contemplating undertaking two projects: "Vocational Interest Inventory of secondary-school students" and "A study of the efficiency of primary education in Jamaica" and is completing an evaluation of "The agricultural production project" that was undertaken by the Technical and Vocational Education Unit of the ministry.

The unit is also collaborating with the Core Curriculum Unit in its project on test development in reading and mathematics, and with the Planning Unit on its survey of educational institutions.

The Planning and Development Division of the Ministry of Education through these five sections is involved in a fair amount of educational research. The results of various research projects by the Ministry of Education have been made available to the general research community in Jamaica by the circulation of mimeographed reports. In other words, the ministry has not invoked confidentiality barriers that could have prevented the dissemination of research results. Researchers have been left free to determine and develop the projects as they have seen fit. On this basis, the attitude in the ministry with respect to research is clearly healthy.

Because the Planning and Development Division has only been in operation for 6 years, it is too early to determine the extent to which the findings from these various studies will affect policy by the Ministry of Education.

The Mel Nathan Institute

The Mel Nathan Institute was established in 1978 and is sponsored by the United Church of Jamaica and is located on the premises of the United Church of Hannah Town in Kingston. The main functions of the institute are community development in ghetto areas using human-development strategies, providing adult education through a community college, providing educational opportunity for infants through a basic school, providing counseling for ghetto families and youths in particular, and conducting research where this will provide basic insights into the problems being tackled and rigorous analysis of the strategies employed in the various programs.

About 30% of the time of this institute has been devoted to research. So far, it has undertaken two major research projects:

. Community research involving identification of the demographic statistics, employment opportunities, business ventures, family structure, and skills in the Hannah Town ghetto

. The values-oriented project: Examining the value orientation of ghetto communities with special reference to values related to education by both pupils and parents

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The second project involves a comparison of the value orientation of ghetto communities with two middle-class areas in Kingston. It is funded by the Ministry of Education through a contract with the Institute.

Organizations that have supported the Institute to date are the Inter-American Foundation, the Oxford Committee for Famine Relief (OXFAM), the Church of Scotland, and the United Presbyterian Church of the United States of America.

The major constraints experienced by the Institute in conducting research are turnover of personnel (loss of the two original researchers who started the values-orientation project); hesitation of people in ghetto communities to share ideas and information because there is some suspicion or fear that information may be used against them or may endanger them in some way; and anxiety on the part of researchers to go out into the area to collect data -- particularly during 1980 in the period leading up to the general elections.

The Institute has, however, attempted to overcome some of these problems by having in-service training programs for staff and short-term attachments abroad for their researchers to see the techniques and procedures that have been used in similar communities. The Mel Nathan Institute is unique in the Caribbean in that it is a private organization without any formal government support. It is also probably the only church-related body engaged in serious educational research. In addition, it is probably the only institution in the region that is looking at the problem of ghetto communities. Although it is still very early to make any judgment on its projects, the Institute has had a promising beginning that is worthy of support.

Although the United Church of Jamaica provides the physical amenities and there are some grants to help cover the cost of staffing, the major brunt of the expenses of the Institute are met through projects. This would seem to indicate that the success of the Institute in these early days will depend to a large extent on the continuity of a series of grants to allow the Institute the opportunity to establish itself. Research is only one aspect of the work of the Institute but it is integrated into the entire operation. The work of the Institute could be conceived as action research involving direct intervention in a ghetto community in which members of the community are integrally involved in the determination of the program.

The Child Assessment and Research in Education Centre, Mico College

The Child Assessment and Research in Education (CARE) Centre of Mico College is designed to cater to the needs of handicapped children in Jamaica. The centre provides a community service and in doing so gives the college the opportunity to provide clinical experience for teachers and other personnel being trained to staff the special-education institutions in the Caribbean. Mico College is the only teacher-training institution in the Caribbean currently preparing teachers of handicapped children. This capability has been developed through development cooperation between the Government of Jamaica and the Government of the Netherlands. Being the only such institution in the region, a fellowship program has been instituted that provides opportunity for teachers from all English-speaking Caribbean territories to be trained at Mico.

The duties and responsibilities of the centre include early identification and early stimulation of children suffering from various handicaps; diagnosis and treatment of children with various disabilities -- especially those with multiple handicaps; development through prescriptive and remedial teaching of an individual educational plan designed to correct or minimize the disabilities suffered by the children; development of reliable and valid tests and diagnostic instruments applicable in the Jamaican and Caribbean situations; undertaking research where this will inform and instruct special educators, policymakers, and administrators operating in the field of special education; and acting as a resource centre disseminating research findings, innovative ideas, creative materials, and proven strategies for particular problems to the special-education community in the Caribbean.

Being in its first year, the centre has not yet overcome the teething problems of establishing its operational systems. It has not yet embarked upon any research projects, but is actively considering a project involving the development of remedial teaching strategies in a selected number of primary schools in Kingston, to remediate the problems of children at the top of the primary schools who have not yet learned the basic skills of reading. Through a special program, Mico College had previously trained about 150 teachers in remedial-teaching strategies and behaviour-modification strategies. This project will attempt to evaluate the work of these teachers and the strategies that schools have adopted to tackle this problem.

As in the case of the Mel Nathan Institute, the CARE Centre is unique in the Caribbean. It is an important resource and can be the mechanism for probing a number of areas that have so far not been investigated in education in the English-speaking Caribbean. It is well known in Jamaican education that large numbers of children at the primary-school level have not been able to acquire the basic skills by age 12. Invariably teachers find it difficult to cope with these children. Research into this area, which would inform teaching strategies and help to develop approaches and materials, could provide a needed breakthrough in the not-too-distant future.

The Early Stimulation Project

The Early Stimulation Project is sponsored by the Jamaica Council for the Handicapped and fulfils the definition of a national project as defined earlier. It is not a part of any existing institution. Nevertheless, it is in operation and constitutes a part of the present research capability in Jamaica.

The objectives of the project are:

. To provide a team of staff to detect developmental disabilities in preschool children and design and implement intervention programs involving the parents of the children in their own home. This team will also act as a resource to other agencies for children, providing consultations and referring them to intervention programs, training, and public education. The aim is to encourage as many disabled children as possible to be integrated in regular programs for children;

. To have a team operate from offices in Kingston to serve at least 200 children;

. To provide a second, smaller team to operate from offices in Spanish Town to provide similar services to around 100 children in the St Catherine area; and

. Over the next 10 years to extend the program from a pilot project to a network of specialized units operating in each parish in the island.

The methodology of the project is to mobilize parents of disabled children to become the teachers of their children in their own homes. It provides a team of community women, frequently parents of handicapped children themselves, supervised by a small multidisciplinary staff who are specially trained to act as agents or child-development aides who work with the mothers and help them to teach their children appropriate developmental skills that, over a period, result in sustained progress. The project seeks to develop a model of intervention that is low cost and involves people in the lower socioeconomic groups.

The expectation is that, if it proves successful, it could be generalized throughout Jamaica and in fact used in other Third World countries. The operation in Kingston started in 1975, and that in Spanish Town, St Catherine, started in 1978. The early results of the project are quite promising and, as a result, it has been able to sustain its funding from the Jamaican Government and has begun to attract some international attention. However, its continued existence is quite precarious.

Support Institutions

The educational research enterprise in Jamaica is supported by an infrastructure in the four essential areas of computing facilities, library and documentation services, links to information systems, and information networks. These support services are provided by eight institutions.

The University Computing Centre

The University Computing Centre is located on the Mona Campus. It has an IBM 370/138 computer with a memory capacity of 512 K. The peripheral machines include four disc drives, five tape drives, one line printer, one card reader/punch, and one card reader. For educational and social science research, it has four compilers, Fortran IV, Cobol, RPG, and Basic. The centre operates on the basis of batch work as there is no facility for remote job entry. Three statistical packages are available for social science and educational research: SPSS, Minitar, and the GPSS (a simulation package).

About 25% of the centre's time is devoted to educational research. Although the centre operates between 6:30 am and 8:00 pm, Mondays to Fridays, it is occasionally used over the weekends for particular jobs.

The major constraint of the centre in providing the data-processing services to educational researchers are fourfold:

. The number of programing consultants must be increased to meet the demands of both researchers and postgraduate students in the master's and doctoral programs in the Faculties of Education and Social Sciences.

. Additional peripheral machines, including terminals to allow for remote job entry, video-display units, diskette readers, and mark-sense readers are needed.

. The existing building is already congested so that expansion is required.

. Software development would expand the capability of the centre to meet the needs of the different types of research being done.

Central Data Processing Unit

The Central Data Processing Unit of the Ministry of Labour and the Public Service is the major computing centre of the Government of Jamaica. It has one IBM 370/135 machine with a memory capacity of 512 K. The peripheral machines consist of six disc drives, four tape drives, two line printers, one diskette reader, one card reader, and four visual-display units. The computer has three compilers used for educational and social science research: Fortran, Cobol, and RPG. The unit does not, however, have any statistical packages related to social science and educational research. Where projects require statistical analysis, programs are written in-house.

The two major constraints of this centre in providing data-processing services to educational researchers are the nonavailability of appropriate software packages, and the shortage of technical staff in the centre to design appropriate systems and to develop the required programs.

Main Library at Mona

The University Main Library at Mona has a book collection of 200,280 books, including theses, and 25,124 pamphlets, including research reports and surveys. The library receives 4053 periodical titles and 1856 government serials. It has 20 phonograph discs, 2745 microfilms, and 92,461 microfiches and cards. Other print materials not included above are: United Nations documents and serials, 46,764 pieces; monographs, 1872; and Organization of American States (OAS) documents and serials, 2695 pieces.

The educational collection of the library consists of 2960 books specifically classified under education, 480 documents, and about 500 periodical titles including government serials. It subscribes to around 50 educational research journals. Fields in education that are reasonably well covered by the library stock are school administration and organization, philosophy of education, and educational training of teachers. The education book collection is about 1% of the entire book collection of the Main Library. The miniscule size of this collection relates to the fact that the Documentation Centre of the School of Education serves as the faculty library. The Main Library, as it were, leaves the responsibility for servicing staff and students in the School of Education to the Documentation Centre.

Documentation Centre, School of Education

The Documentation Centre of the School of Education serves a dual purpose. It functions both as the faculty library of the School of Education and as a documentation centre. Its book collection is 10,646 volumes. It has 5406 documents including theses and studies mainly related to education in the English-speaking Caribbean. The centre probably has the most comprehensive collection of unpublished research about the English-speaking Caribbean. It subscribes to 111 periodical titles most of which are research journals. It has 96 audio-disc films, 5 tapes, 185 film strips, 262 slides, 9 microfiches, 39 microcards, 40 microfilms, 180 charts, 3 reading logs, and 12 maps. The areas of education that are reasonably well covered are curriculum, educational psychology, teacher education, West Indian education, and mathematical texts.

The Documentation Centre is one of the nodes of the Social and Economic Information Network (SECIN) of the National Council on Libraries, Archives and Documentation Services (NACOLADS) in Jamaica. This is a national information network designed to collect primary source materials in socioeconomics. This network is described more fully later in this chapter. The Documentation Centre is also linked to CARISPLAN and prepares abstracts that appear in CARISPLAN.

Originally the Documentation Centre was conceived as a staff-oriented institution collecting primary source materials, research theses, and studies. As the School of Education grew and the need for library services became a major concern, the centre became more and more student-oriented and it introduced a lending service. The centre has, therefore, evolved into the faculty library for the School of Education. One of the major constraints placed on this facility at the moment is physical space: it has seating capacity for only 28 persons. In addition, because of staff limitations, it is not possible to serve adequately the needs of both a lending library and a documentation centre. Despite the constraints, however, the centre has specialized in the collection of theses and research reports on education in the English-speaking Caribbean. All members of the staff of the School of Education, for example, are requested to deposit copies of their work with the centre. However, for the centre to serve both its library and documentation functions, considerable expansion of both physical facilities and staffing are needed.

The Institute of Social and Economic Research Library

The library of ISER-Mona has a book collection of 4500 volumes, documents totaling 25,500, and periodical titles numbering 745. Of this collection, 250 books, 380 documents, and 2 periodical titles relate specifically to education. The books and documents in this library are mainly in the fields of sociology and social psychology in education. This library is also one of the nodes of SECIN.

The ISER-Mona Library is in the process of transition. The traditional faculty library (books and journals) was established for graduate students, researchers, and faculty members. Over the years, the library's holding has tended to reflect the dominant research interests of the researchers at ISER. In 1975, it was recognized that a traditional library system could not adequately cope with the needs of the users. The changing pattern in research, from basic to applied to policy studies, demanded that greater emphasis be placed on primary socioeconomic data. With the assistance of the Inter-American Foundation, the Institute is in the process of establishing a Development Output Evaluation Research Service (DOERS) to collect, store, analyze, and disseminate documents and data generated from its projects and materials on developmental sciences in the region. The establishment of a documentation and data centre to replace the conventional library is an integral part of DOERS and an extension to the present library building, funded by the European Development Fund, is being constructed to house this centre.

Ministry of Education Library

The library of the Ministry of Education has a book collection of 5000. It houses 2792 documents and subscribes to 74 periodicals:

titles, 4 of which are educational research journals. The library has 128,021 titles on microfiche. It is equipped with one microfiche reader-printer, four microfiche readers, one optical coincidence card reader, and one computer terminal. The areas of education that are reasonably well covered by the existing stock are psychology, sociology, curriculum development, educational research, and philosophy. The Ministry of Education Library is also one of the nodes of SECIN. The major constraint in operating the ministry's library at the moment is personnel as the ministry has not been able to recruit and retain suitably qualified librarians.

Links to Information Systems

The Ministry of Education Library has a computer terminal that is linked to the Lockheed Dialogue Information Retrieval System in California, USA. Through this link, it is possible for educational researchers to have access to the major computer data bases in the USA -- ERIC is the data base that is most frequently accessed. This facility is used by researchers in the Ministry of Education and the university. Its existence, however, is not known to all the educational researchers in Jamaica.

The National Information Network

SECIN was established by NACOLADS in Jamaica. This council is the advisory body set up by the Government of Jamaica to coordinate, promote, and oversee the development of libraries, archives, documentation services, and information systems in Jamaica. So far, NACOLADS has established two information networks, the Science and Technology Information Network (STIN) and SECIN. The headquarters of this network is the National Planning Agency of the Ministry of Finance. With the assistance of IDRC, a documentation centre is being developed to serve as a focal point of the network.

The member libraries of this network are: the Library of the Ministry of Education, the Documentation Centre of the School of Education, the ISER-Mona Library; libraries of the Ministry of Finance, Information and Culture, the Department of Statistics, the Social Development Commission, and the Industrial Development Corporation; libraries in the mass media sector, the Agency for Public Information, Jamaica Broadcasting Corporation, Radio Jamaica and Rediffusion, the Daily Gleaner, and the Daily News; and libraries in the financial and business sectors, for example, at the Bank of Jamaica, Jamaica Development Bank, Chamber of Commerce, and Jamaica National Investment Corporation.

The objectives of the network are to:

- Develop an effective socioeconomic network as an integral part of the national information system;
- Develop information retrieval tools, a union catalogue and a union list of serials, to facilitate the dissemination and encourage the use of socioeconomic information resources;
- Coordinate and rationalize the development and use of socioeconomic information;
- Develop and maintain a system of bibliographic control for locally generated socioeconomic information; and
- Prepare abstracting and indexing journals and special subject bibliographies in the field of socioeconomic information.

The primary instruments to be developed for sharing information in this network are a union catalogue and a union list of serials indicating the holdings of the members of the network. This will permit a better interlibrary lending system than currently exists. Links are also being established between the member libraries and the National Referral Service operated by the National Library of Jamaica. It is proposed to publish shortly the **SECIN Abstracting Journal**.

The major constraints in operating the network are inadequate financial support, lack of automated facilities, the high level of nonprofessionals staffing the information units, and the low status of information units within the various organizations.

The most immediate plan for the future is to secure an automated operating system that will allow rapid access to and delivery of information to the users of the network. In addition, two surveys are planned -- one of resources and the other of users. Analysis of these surveys will allow for better projections and services to meet the information needs of the users of socioeconomic data.

There is the recognition of the need to expand the services of the network to meet the needs of planners, policymakers, and decision-makers by the repackaging of information. However, the existing resources will not allow for immediate work in this area.

Although the professional librarians are all aware of the existence of SECIN, this national network is not known by the majority of educational researchers. Researchers must become aware of this network to ensure their cooperation in contributing materials to the nodal points and also to be able to use the libraries belonging to this system as a means of obtaining information.

Funding

The national project and seven educational research institutions in Jamaica all receive their core funding from local sources. In addition, some of the projects are funded from local sources. However, the research activity in Jamaica is not supported solely from local sources because several international agencies have given grants for research. Agencies that have made grants for educational research projects in Jamaica are IDRC, Ford Foundation, OXFAM, Inter-American Foundation, OAS, Netherlands Government, Unesco, and UNICEF.

The largest grant for a single research project currently in operation is IDRC's grant to the Ministry of Education (Core Curriculum Section) of CA$500,000 over a period of 3 years. Most other grants are quite small, being of the order of US$50,000 and, generally, research projects in Jamaica are very modestly funded, whether from international or local sources. Of necessity, the projects are small and are mainly the efforts of a single individual assisted by a few research assistants or, possibly, two researchers working on the project on a part-time basis.

The USAID loan to the Jamaican Government for rural education, which is currently being disbursed, includes an amount for educational research. Although the amount of money involved is small, US$250,000, it represents a significant development in that this is the first time that a Caribbean government has actually entered into a loan agreement that includes educational research as part of the loan. In disbursing this loan, the Ministry of Education has retained some of the funding for projects carried out by its Planning Unit, Core Curriculum Unit, and Research Section. However, it has entered into contracts with organizations outside of the Ministry of Education to research several different topics. The institutions involved with the contract research are the Mel Nathan Institute, the School of Education (Research and Higher Degrees Section), and the St Hilda's High School in Brown's Town. Through this exercise, the Ministry of Education has gained experience in the area of contract management of research projects -- a new phenomenon in the Jamaican educational system. These contracts have also given valuable help in institution-building to the School of Education (Research and Higher Degrees Section) and the Mel Nathan Institute.

Journals

Journals published in Jamaica that report research findings to various audiences fall into three categories:

. Technical journals in which research is reported for the benefit of other researchers;
. Technical journals in which research findings are reported for the benefit of practitioners, that is, administrators, supervisors, classroom teachers, and teacher trainers; and
. Nontechnical publications intended for the informed nonspecialist where research findings form the base of articles identifying new ideas, trends, and implications of empirical research.

The journals published in Jamaica are discussed according to this classification.

Technical Journals for Researchers

The Caribbean Journal of Education is published by the School of Education. The journal was established in June 1974 and the latest issue is September 1980. Currently there are three issues per year and the journal has a circulation of around 500 copies per issue. The major subscribers are Jamaican institutions, academics, and individuals and institutions and academics in the rest of the Caribbean. The editorial policy of the journal is to accept any submission to do with research, development, or discussion of education in the Caribbean or of the education of Caribbean people abroad. Most articles in the journal are empirically based. It is the only journal in the Caribbean devoted solely to the publication of educational research in the region.

Caribbean Quarterly is published by the Extra-Mural Department, Mona. This journal started publication in 1949 and its latest issue, Volume 26 (No. 1 and 2), is dated March/June 1980. There are three issues per year, one being a double issue. The journal has a circulation of around 750 copies per issue. The journal is multidisciplinary in the articles that it accepts and publishes. It is published on thematic lines from articles that are invited as well as articles offered by various contributors. The journal carries a combination of research articles and topical articles that are sometimes polemical. The major contributors are academics, research institutions, and the university libraries in the Caribbean and abroad. **Caribbean Quarterly** is among the three best known and internationally recognized journals published in the Caribbean.

Social and Economic Studies is published by ISER-Mona and started publication in 1953. There are four issues per year and the latest is March 1979. The journal has a circulation of 1500 copies per issue. Its major subscribers are academics and libraries world wide. The policy of the journal is to publish papers that are either reporting research findings or reviewing research that has been done. Articles are required to have a theoretical focus as well as to be related to phenomena in the developing world with particular reference to the Caribbean. It publishes education papers as these relate to social-science issues. **Social and Economic Studies** is the best known research journal, and most widely recognized internationally, published in the English-speaking Caribbean.

The Working Papers Series is also published by ISER-Mona. It started publication in 1972 and its latest issue is No. 28 (1981). Currently, the series has a circulation of 200 copies per issue. Its major subscribers are libraries and academics and sales are made through bookshops. Although most of the papers published are research articles, this is not a requirement of **The Working Papers Series.** So far, none of the papers published has been in education because, to date, education articles have not been submitted.

Technical Journals for Practitioners

The CARSEA Journal is published by the Caribbean Association of Educational Administrators (CARSEA). It began publication in June 1976 and its latest issue is November 1979. Three issues are published per year. Currently, the journal has a circulation of 850 copies per issue. The major subscribers are members of the association in Jamaica and Barbados, academics throughout the Caribbean, and libraries throughout the Caribbean and in the USA. The journal publishes articles on issues as seen by the administrators in the field along with the empirical findings of researchers related to those problems. It seeks to maintain a dialogue between practitioners and researchers. Papers are submitted on a voluntary basis. Leadership of the CARSEA comes mainly from the Teaching Section of the School of Education, Mona. However, although **The CARSEA Journal** is managed mainly by University of the West Indies academics, it is not a journal of the School of Education, Mona.

The Science Journal is published by the Association of Science Teachers of Jamaica. The first and only issue of this journal was Volume 1 (No. 1) of 1980. It replaced **Science News and Notes** formerly published by the association on an annual basis. This journal publishes articles, notes, and reports concerned with methods of teaching science and developments and research of relevance to science educators. Its audience is mainly science teachers across Jamaica and it currently has a circulation of 600.

The Magazine of the Mathematical Association is published by the Mathematical Association of Jamaica. It contains articles about mathematics and mathematics education, some of which are research based. Its audience consists of mathematics teachers and educators who are members of the association and also a few libraries. Its first issue was in 1972 and the latest is Volume 9 (June 1980). It is published on an annual basis and has a circulation of about 200 copies per issue.

The Journal of English Teachers is published by the National Association of Teachers of English. This journal publishes reports of workshops, topical articles related to the teaching of English language and literature, and papers reporting the findings of research with implications for the teaching of English. Its audience is teachers of English. The journal currently has a circulation of about 300. There are three issues per year with the latest issue being March 1980.

The Jamaica Reading Association Journal is published by the Jamaica Reading Association. It publishes articles on the theory and practice of reading, some of these are empirically based. It also publishes stories and poems suitable for classroom use. The major audience is teachers of reading in primary and secondary schools and teachers'-college students. Its first issue was April 1970 and the latest issue is 1979. It is published annually and has a circulation of 200.

Nontechnical Journals for the Informed Nonspecialist

Torch is published by the Ministry of Education and began publication in 1947. Its latest issue is Volume 27 (No. 1) of 1980. There are two issues per year and the journal has a distribution of 4000. The journal is free and is circulated to all public educational institutions in Jamaica and to overseas libraries. Its major focus is on ideas and trends in education. It is written for teachers and informed nonspecialists. Although many of the articles have a basis in empirical research, they are usually written in nontechnical terms. Although articles express the concerns of the authors, the editorial policy is to solicit and accept articles related to ideas supporting concepts being implemented in the educational system by the ministry. **Torch** is the most widely circulated of all the journals published in Jamaica.

Jamaica Journal is published by the Institute of Jamaica. The journal aims to communicate with informed and intelligent nonspecialists and publishes articles in the arts, natural and social sciences, and education. It has a circulation of 5200 and is published twice per year. The journal was first published in 1967 and its latest issue is July 1981.

Training in Research

The School of Education is one of the two institutions in the Caribbean offering training at the master's and doctoral levels in the area of educational research. This program was established in 1964. It is fully described in the chapter on training of researchers in the Caribbean.

Constraints

The conduct of research in Jamaica is constrained by eleven factors.

First, there is no organization that brings together educational researchers in Jamaica. As a result, there is no sense of community among educational researchers. There is no forum in which educational researchers on a systematic basis can share, at a professional level, the products of their efforts. Thus, although the individuals may be known to each other and although they may have a vague idea of what each other is doing, in many instances there is not a proper understanding of the exact nature of the work done by colleagues.

Second, there is still little team research. The limitations here are from two points of view:

. There is very little multidisciplinary research in which a common problem is approached in a concerted way with the methodologies of several different disciplines. Consequently many of the prescriptions offered for various problems are, of necessity, piecemeal or narrow.

. The team structure often provides a setting in which the older and more experienced researchers can pass on skills and inspire confidence in the younger and less experienced researchers. The individualism that characterizes the current situation in Jamaica does little to enhance the development of young researchers.

Third, the personnel involved in educational research also carry out service functions. ISER-Mona is the only institution engaged in research that does not perform service routines that require a significant amount of time. Even in the Research and Higher Degrees Section of the School of Education, researchers are overburdened with the work of supervising postgraduate students. Invariably research becomes a secondary activity to the service-oriented functions that are the primary responsibilities.

Fourth, because of the part-time nature of the higher degrees program, the training of researchers is a long and tedious affair and many fail to complete the course. If the number of researchers is to be significantly increased, especially at the doctoral level, a full-time program is needed.

Fifth, although there have been research projects that have had implications for policy and have influenced educational policy, little policy research, as such, is being undertaken at present. This is unfortunate at a time when educational policy is very much in the forefront of overall government policy and is often used as the flagship for development.

Sixth, by and large, over the years, the School of Education has adopted an arm's-length relationship with the Ministry of Education. Although this situation has changed recently, much of the research done in the School of Education has not been related to national concerns. The general opinion is that the research is esoteric and irrelevant.

Seventh, over the last 5 years, Jamaica has experienced very restrictive economic circumstances. In this setting, it has not been able to fund research projects generously. Such funding that has been available from international agencies has invariably been modest. The resources available for research have, to a large extent, limited the scope of the projects that have been undertaken. Thus, even where national concerns of immediate interest and importance are investigated, the efforts are invariably modest. As a result, the conclusions are restricted and not of wide application.

Eighth, little review and assessment of research has been done in Jamaica. Leo-Rhynie (1980), reviewing research in teacher education, represents one of the few such efforts. There is need for state-of-the-art papers that attempt to make some qualitative judgments concerning what has been accomplished to date, to identify gaps, and to identify promising results that warrant further investigation.

Ninth, the research that has been done has generally not been translated from its technical terms and disseminated to practitioners in primary and secondary schools, teacher-training institutions, and administrators. Although some attempt has been made to do this through the **CARSEA Journal** and for such disciplines as mathematics, English, and reading, there is need for a comprehensive program intended to promote the application of the insights gained so far from research.

Tenth, although the University Computing Centre has a number of statistical packages available, further software development is necessary. Software for linguistic research is one of the areas in greatest need of urgent attention. Because of the large number of social science and educational researchers who use this facility, statistical packages that can be used by the nonspecialist for computing are necessary to free the time of the program consultants for unique and special circumstances.

Eleventh, although there are four libraries serving educational researchers in Jamaica, collectively they are inadequate. Their total education book collection is 13,180 volumes. This serves a community of over 300 researchers and graduate students. A ratio of 40 books per researcher is totally inadequate at this level of sophistication.

Discussion

Educational research, which began to be institutionalized in Jamaican society 28 years ago, is now firmly established. A viable research enterprise has emerged. All the necessary support services are in place and there is a sufficient number of individuals and institutions involved in educational research to indicate that it will remain a permanent part of the educational framework. In my opinion, the three most critical factors influencing the future evolution of research in Jamaica are leadership, funding, and further institutional development.

TRINIDAD

Educational research has been institutionalized in Trinidad with its major locus at the University of the West Indies. Although the relationship has been informal, there has been close collaboration and cooperation between the School of Education at St Augustine and the Ministry of Education. In addition to the institutional framework, the support infrastructure is also in place in terms of library facilities, data-processing capability, information networks and links to information systems in North America, and journals published in Trinidad to disseminate research findings.

Research Institutions

Three institutions in Trinidad are engaged in educational research: the School of Education at St Augustine, ISER at St Augustine, and the Ministry of Education.

School of Education

The School of Education, St Augustine, consists of two sections, Research and Curriculum Development and Teaching. A total of 53 researchers are employed in these sections.

The major responsibilities of the Research and Curriculum Development Section are to conduct research, disseminate the findings of research, offer in-service training for teachers and supervisors, provide supervision for students at the master's and doctoral levels who are doing education-related topics, and assist the Ministry of Education with the moderation of teachers'-college exams and teaching practice.

About 75% of the unit's time is related to research and development activities with the remainder in services in both the university and the Ministry of Education.

Projects undertaken and completed by the unit are:

- West Indies science curriculum improvement project
- Carnegie project in primary-school organization in Trinidad and Grenada
- Language research project
- Unesco project for the development of language arts, science, and mathematics curricula for the 10-15 age group and teachers' colleges
- Social studies project
- Selection tests for Public Transport Service Corporation operatives
- Assessment of teaching practice in teachers' colleges
- Development of microteaching packages of skill films and printed materials

Projects in progress at the moment are:

- Language arts project
- Moral education project
- Primary science project
- Reading at the primary level

One project planned to come on stream in the near future will involve all five persons in the department. It is entitled "The placement of students in secondary schools in Trinidad and Tobago and their performance."

Agencies that have assisted the unit with its various projects include Ford Foundation, Carnegie Foundation, Unesco, and CEDO. Projects being undertaken at the moment are funded not from any external sources but from the Government of Trinidad and Tobago and the internal resources of the School of Education.

The work of the unit has been heavily directed toward curriculum development as can be seen from the projects that have been undertaken. However, this direction has not been completely dominant. For example, "The language research project" has been basic research in the area of linguistics and a project dealing with the assessment of teaching by teachers'-college students has been applied research. One of the present limitations of this section is that it has developed its staff with respect to subject disciplines and curriculum concerns. Hence, there are significant areas of educational research that it does not, at present, have researchers with the competence to handle, for example, sociology of education, psychology of education, and the economics and financing of education.

The major responsibilities of the Teaching Section are teaching university courses in education and supervising teaching in the in-service diploma program. It also includes in-service training on an ad hoc basis for other teachers in the profession. Research is pursued in this section as individual efforts related to the personal advancement of individual lecturers in the university. In some instances, lecturers in the Teaching Section have collaborated with researchers in the Research and Curriculum Development Section on projects. For example, the project dealing with selection tests for transport operatives was carried out as a joint effort by one member of the Research and Development Section and another from the Teaching Section. However, the project was contracted to the Research and Development Section.

The Teaching Section was established in 1973 and is, therefore, much more recent than the Research and Curriculum Development Section. It is funded by the Government of Trinidad and Tobago but research has not been contracted to this section. Moreover, taking into consideration the other responsibilities of the members of this section, little research has been done.

Projects that are currently being undertaken by members of this section include:

- Survey of the basic maths skills essential for social functioning possessed by comprehensive high-school students at the end of their program
- Drug abuse in Trinidad and Tobago
- Teaching of English in Trinidad and Tobago

Research in the Teaching Section is an ancillary activity. Extra time has to be made for it but institutional support given to it is not great. Consequently, the members of this section have not done a great deal of educational research to date, although they possess the skills to do so.

The Institute of Social and Economic Research, St Augustine

The major functions of ISER-St Augustine are conducting social and economic research, disseminating research findings, teaching demography at both the undergraduate and graduate levels in the Faculty of Social Sciences, and providing consultancy services to Caribbean governments. About 90% of the time of the Institute is devoted to research.

Projects in progress or completed are:

- Study of the impact of tourism on Tobago
- Fertility and family planning among men in Trinidad and Tobago
- Female fertility and family planning in Trinidad and Tobago
- The population of Trinidad and Tobago
- Labour-force surveys in Guyana
- Veterinary manpower survey

- Survey of students' off-campus accommodation
- A manpower forecasting model for Trinidad and Tobago
- Unesco studies on education-fertility relationships in the case of Guyana
- Fertility surveys in the Caribbean region

Projects about to be implemented or being considered are:

- Integration of population education in rural development
- Rationalization of the sugar industry
- United Nations Industrial Development Organization (UNIDO) project on the role of the public sector in the industrialization of developing countries
- Education of females in Trinidad
- Educational output and skills requirement of the economy
- An econometric model for Trinidad and Tobago

Agencies that have assisted the projects of ISER-St Augustine include USAID, the Population Council, the Committee for International Coordination of National Research in Demography, and Unesco. As the list of projects indicates, ISER-St Augustine has been doing educational research, or rather social-science research related to educational issues and concerns. Thus, ISER-St Augustine constitutes the only group of social scientists in the region who have not only manifested an interest in education-related research but have actually been doing such research.

Ministry of Education

There are three units or sections of the Ministry of Education whose work involves educational research. These are the Planning Unit, the Curriculum Section of the School Supervision Unit, and the Measurement and Evaluation Section.

The major functions of the **Planning Unit** are planning the development of the education sector, relating the education sector to the economy, and implementing plans and projects.

The Planning Unit gathers a great deal of data on the educational system of Trinidad and Tobago. It only analyzes some segments of that data as they relate to the planning function. The unit therefore has at its disposal a great deal of unused data. To date, the unit has not carried out any actual research projects. However, it publishes annually "Educational statistics of Trinidad and Tobago" and "A school directory of Trinidad and Tobago."

Major responsibilities of the **Curriculum Section** are: supervision of curriculum in schools, in-service training of teachers, evaluation of curriculum and the conduct of workshops, serving as external examiners for secondary and tertiary institutions, conducting interviews for the recruitment of teachers and the awarding of scholarships, assessment of degrees and diplomas, evaluation of textbooks, and assessment of private schools.

Research activities undertaken by the section are usually related to the development and evaluation of curricula in the various subject areas. The following projects have been undertaken by the unit or are currently in progress:

- Revision of junior secondary school syllabuses
- Implications of CXC exams for schools in Trinidad and Tobago
- Spanish curriculum for junior secondary schools
- Alternative Spanish curriculum to the CXC for senior forms in high schools
- Primary school science curriculum
- Projects in advanced physics for independent learning
- STEP and ASTEP for teacher education
- Preschool science program
- Revision and review of all syllabuses in music in schools and colleges
- Language arts for preschool
- New program for art and craft for junior secondary schools
- Art and craft for primary schools
- Family-planning education for secondary schools

A project that is being considered is "A curriculum for marine affairs in schools using the infusion model." Because the responsibilities of curriculum supervisors in the Curriculum Section are quite onerous, the amount of research that is being done is very limited. They are engaged, however, as the list of projects indicates, in syllabus revision and in curriculum construction for several subject areas. To a large extent, the developmental work of this unit is integrated into the daily tasks of the curriculum supervisors. The unit has not mounted, for example, an experimental program related to the teaching of any subject area, the use of a particular methodology, or the effectiveness of any materials. The major responsibilities of the unit relate to services to the educational system and only a minor part is devoted to development and still less to research.

The responsibilities of the **Measurement Section** consist of the conduct of the Common Entrance examination in collaboration with the Educational Testing Service in Princeton, the conduct of the junior secondary schools examinations, the placement of children in schools in forms one and four, testing on an ad hoc basis for service areas such as nursing, the military, etc., and evaluation and research.

Only about 5% of the time of this section is actually spent in research although the section gathers a great deal of data concerning the educational achievement of children in Trinidad and Tobago. The vast bulk of this data is, however, not analyzed.

The unit has carried out one project, "The placement process in Trinidad." It is not now conducting any research but is preparing to study "The preparedness of the Trinidadian school system for the CXC history syllabus." Although both professional officers in this section are trained in educational research and the work of the section generates a great deal of data, little research is done because the time of the officers is devoted to service functions.

Support Services

The educational research enterprise in Trinidad is supported by a number of institutions that provide vital services. These include the University's Main Library, the School of Education Library, the

University Computing Centre, the Computing Centre of the Central Statistical Office, the Caribbean Industrial Research Institute (CARIRI), and the Economic Commission for Latin America (ECLA).

The Main Library of the University

The Main Library of the University of the West Indies at St Augustine houses a book collection of 182,415 volumes. It subscribes to 7180 periodical titles and has about 600 audiovisual items. It has 4421 microforms covering a wide variety of topics. Its education collection consists of 3800 books and 550 periodical titles. Around 200 of the periodical titles are educational research journals, but only 14 of the microforms relate to education. The areas of education that appear to be well covered by the existing stock of books are educational administration, history and philosophy of education, and education in the West Indies.

The editorial committee of CAR INDEX Social Sciences is located at St Augustine and works out of the University of the West Indies Library and the Central Library of Trinidad and Tobago. CAR INDEX Social Sciences publishes a biennial guide to Caribbean periodical literature in social sciences. The Main Library at St Augustine is also one of the participant libraries in the ECLA's Caribbean Information System Planning Sector. The librarian in charge of the West Indian collection is responsible for inputs into this system relevant to publications emanating from personnel at the St Augustine Campus of the University. The library receives the CARISPLAN abstracts published by this system.

The School of Education Library

The School of Education Library specializes in the subject of education. It has a collection of 16,913 book volumes and 400 documents. It subscribes to 123 periodical titles, most of which are research journals. This library works in conjunction with the Teachers' Centre, which houses all the audiovisual materials used in the School of Education. Neither the School of Education Library nor the Teachers' Centre has any microforms. The fields well covered by the existing stock of this library are child psychology, curriculum, teaching of reading, moral education, and sociology of education. This library is attempting to develop special documentation services to meet the demands of staff and students of the School of Education, St Augustine.

Among the items that have been built up so far are dissertation abstracts recording theses on West Indian education done in North America, a collection of all the Diploma in Education theses done by students at St Augustine, and local documents on education.

Computing Centre, University of the West Indies

The Computing Centre of the University of the West Indies, St Augustine, has an ICL 1902A computer. The peripheral machines are three disc drives, four tape drives, one line printer, two card readers, and one graph plotter. The computer has six compilers: Fortran IV, Cobol, RPG 2, Algol, Basic, and Pascal. The machine has no facilities for remote job entry and all jobs are done on the basis of batch work. Several statistical packages are available for social science and educational research: SPSS, ICL survey analysis package, ICL SILAN package for large surveys (e.g., for censuses), ICL statistical analysis package, and various other statistical programs (for example, multiple-regression analysis, analysis of variance, and cluster analysis).

The centre is managed by a committee that includes representatives from all sections of the university including the School of Education.

Little demand has been made on the centre by educational researchers. It should be noted, however, that where demands were made on the centre for the data processing of the linguistics project, the centre was unable to assist because it lacked the appropriate software.

The Caribbean Institute for Research in Industry

The Information Service Section of CARIRI has established links with the major vendors of computer-based information in the United States including DIALOGUE. At the moment, it is being planned to change the Telex link with the data bases to a computer terminal link. Arrangements with TRININTEL, the Telecommunications Corporation of Trinidad and Tobago, are at an advanced stage. When this change takes place, CARIRI can become the vehicle through which educational researchers will be able to obtain data from ERIC, for example. To date, this service has not been used by educational researchers because, to a large extent, there has been little contact between the information specialists in CARIRI and the educational researchers in the School of Education or in ISER-St Augustine. It would appear that the lack of use of the system is due to poor communication because the links are being used to obtain information for science and technology. There is no reason why social scientists and educational researchers cannot be served by the same facility.

The Economic Commission of Latin America

ECLA has a regional office in Port of Spain. One of its responsibilities is to develop a Caribbean network collecting primary source materials in the field of planning. This would include not only financial, social, and economic planning but also educational planning. It is currently publishing the CARISPLAN bibliography. This should be an important information network for educational planners and researchers in the region. At the moment, however, both the planners in the Ministry of Education and the researchers in the university in Trinidad are unaware of this network. Again, it is a matter of communication and establishment of the necessary linkages.

Funding

At present, core funding for all research institutions in Trinidad is from local sources. Except for ISER-St Augustine all project funding is also from local sources. Currently, ISER-St Augustine is undertaking some projects funded from grants from international agencies. The present situation is quite different from that of educational research when started 15 years ago. The core funding for the Institute of Education came from the Ford Foundation and project funding for the early research efforts came from the Carnegie Foundation. From an initial position where both core and project funding were from international agencies, core and project funding for all three institutions are now almost totally from local sources. This indicates that not only has educational research been institutionalized in the society but also financial responsibility for the educational research enterprise is being provided from indigenous sources.

Journals

I was able to identify eight journals through which research findings could be communicated to various audiences in Trinidad and Tobago. Five of these journals are directed to practitioners, that is, classroom teachers, teacher trainers, principals, and other educational administrators and ministry officers. One of them was directed to the wider community of the informed nonspecialist and two are directed to researchers.

Journals Directed to Practitioners

Annotated Bibliography for Science Education is published by the School of Education, St Augustine. It was started in January 1980 and the latest issue is that of January 1981. The proposal is to produce three issues per year. Currently, the journal has a circulation of 280.

The Journal of Education and Science of Trinidad and Tobago is published by the Association for Science Education of Trinidad and Tobago. The association publishing the journal is made up largely of science teachers in schools and science tutors in teachers' colleges. This journal is circulated mainly to members of the association. Its main emphasis is on issues related to the teaching of science. The latest issue is Volume 8 (No. 3) of May 1981.

The History Teachers' Journal is published by the History Teachers' Association of Trinidad and Tobago. It was first published in 1978 and the latest issue is that of April 1981. Two issues are published each year. The main focus of the journal is the teaching of history in schools in Trinidad and Tobago.

Social Studies Education is published by the Social Studies Project of the School of Education, University of the West Indies, St Augustine. This journal was first published in 1974 and its latest issue is that of October 1980. There are two issues per year. The journal has a circulation of 1200 and is widely distributed in the entire Caribbean region. Its major subscribers are social studies teachers, tutors of social studies in the training colleges, and curriculum supervisors and administators in Ministries of Education. The journal is supported by advertisements and subscriptions and is entirely self-financing. It reports on social studies curriculum, evaluation, and research findings. It also gives reports on workshops and seminars in social studies in the Caribbean. It attempts to keep its readers up to date on the latest trends in the methodology of teaching. Each issue has a theme: the issue of February 1980, for example, was on "The Family." Because of its regional audience, particular issues of the journal focus on particular territories such as Jamaica, Barbados, the Eastern Caribbean, or Guyana. Of all the journals published in Trinidad, **Social Studies Education** has the widest regional audience and serves the needs of social studies educators in the entire Caribbean region.

The Educational Journal of Trinidad and Tobago is published by the Ministry of Education of Trinidad and Tobago. The first issue was in March 1965 and its latest issue is Volume 6 (No. 1) of 1976. When the journal was appearing regularly, the attempt was to produce three issues each year. This, however, was never achieved. The journal had a circulation of 5000. It was directed mainly to teachers and principals in Trinidad and Tobago and dealt with a wide range of educational issues. Articles were related to curriculum issues, new policy directions of the Ministry of Education, research findings, and latest trends in particular fields. The ministry states officially that the journal is not defunct and will reappear in the not-too-distant future. However, in 1981, it had not produced an issue in 5 years.

Journal Directed to the Informed Nonspecialist

Caribbean Issues is published by the Extra-Mural Department, St Augustine and deals with topical concerns. It attempts to bring informed opinion, based on either logical analysis or empirical data, to bear on current concerns. The journal publishes articles from a wide range of academic and professional disciplines, including education. Its concerns, however, are by no means limited to education.

Journals Directed to Researchers

The journals reporting educational research findings in a technical manner and directed to researchers are the two **Occasional Papers Series: "General"** and **"Human Resource Development"** of ISER-St Augustine. The **General Series** has a circulation of about 300. It was first published in June 1977 and its latest issue is No. 4 of January 1980. Its major interest is social science research but it includes concerns related to education. The **Human Resource Development Series** has a circulation of around 500. It was started in April 1975 and its latest issue is Volume 4 (No. 3). Educational research papers are more readily accommodated in this series because of its human-development focus.

Constraints

The current constraints on the development of educational research in Trinidad are sixfold.

First, research projects are, in the main, individual efforts with a minimal amount of assistance. Although a team project is being planned in the Research and Development Section of the School of Education, this is the exception, rather then the rule. As a result, the projects are usually small and limited in scope or take a long time to achieve the desired results. Also, because of the singularity of the effort, projects tends to be restricted to a particular discipline and multidisciplinary projects have not yet been attempted.

Second, the focus of research has been quite narrow to date. It has concentrated almost exclusively in the area of curriculum research. Although some excellent work has been done, the skills that exist are concentrated in a few fields and certain kinds of research have not been attempted, for example, classroom observational research, experimental research, and psychometric research. Future development must include research into other areas.

Third, there is a lack of communication among researchers and institutions so that facilities are not always utilized. For example, although researchers are aware that CARIRI exists, many are not aware of its information links to data bases in the USA. Equally, there has not been much dialogue between social science researchers at ISER-St Augustine and members of the Research and Curriculum Section of the School of Education.

Fourth, there is no sense of a research community and no formal and professional dialogue between the parties concerned. Therefore, such professional activity that takes place tends to be restricted to scholars in the same discipline rather than discussions between researchers across the various disciplines working in Trinidad. Thus, although the researchers are all known to each other, they might not be aware professionally of the details of the work that each happens to be doing and the implications for everyone.

Fifth, there is a lack of formal training of researchers in that there is not a higher-degrees program in the School of Education, St Augustine. Such a program is needed in Trinidad at the moment and the School of Education could mount such a program. The future development of research in Trinidad must be predicated on expanded training facilities, linked to an expansion of the range of research interests, skills, and competence existing in the research community. In other words, the move to branch out into other areas of research could be linked to the establishment of a research training capability in the School of Education. By so doing, training would be linked to the development of research and the incorporation of new skills and competencies.

Sixth, although the Computing Centre of the university is quite adequate for the research needs at the moment, suitable programs must be developed, especially where this relates to linguistic research. The linguistic and language-arts projects taking place have been hampered significantly by the absence of such software. Like the rest of the Caribbean, there is need for the development of programs that allow the researchers to have access to the statistical packages directly without going through systems analysts and programers. If such programs were developed, the use of the computer in data processing would be significantly increased.

Comment

Educational research has been firmly institutionalized in the Trinidadian society. A small but respectable research enterprise now exists in which the necessary infrastructure is in place. Although there is need for the rationalization of elements and greater information providing for increased usage of all the facilities that exist, such problems can be easily overcome. There are research institutions, researchers with skills, projects that have yielded results that have influenced policy, support institutions that have recognized their need to support the research enterprise, and local core and project funding for research. All these are healthy signs for the future.

Further development must include the significant expansion of the Research and Development Section of the School of Education, St Augustine. To its curriculum-development activities must be added research in other areas. Education as it relates to the economy, to government, and to the social structure can be developed in conjunction with ISER-St Augustine but there are other areas that the school itself must take full responsibility to research. These include classroom teaching, teaching in education, education and work, early-childhood education, child development, and student achievement across the educational system.

Through the auspices of the School of Education, a conference to examine educational research in Trinidad and Tobago was set for July 1981. One can only hope that the deliberations of this conference will set a course of action for the future that will enhance and accelerate the rate of development of educational research in Trinidad.

REGIONAL PROJECTS AND INSTITUTIONS

In this section, two regional projects and one regional institution are described. Because I feel that these institutions do not fit in the description of the research capability of any single country, and for reasons of both economy of space and accuracy of description, they are better represented as regional in character and operation. The two regional projects are "The regional preschool child-development project," and its associated centre, and the "Caribbean education development project." The regional institution is the Caribbean Food and Nutrition Institute (CFNI).

The Regional Preschool Child-Development Centre

The Regional Preschool Child-Development Centre is a unit of the Extra-Mural Department of the University of the West Indies. It is sited on the Mona Campus, serving as a Caribbean institution whose aim is to encourage interdisciplinary approaches to the promotion of the total development of preschool children in the Caribbean region. The centre is the training and research arm of the wider "Regional preschool child-development project," which serves the English-speaking Caribbean and Surinam.

The objectives of the centre are:

. To identify and establish developmental standards and criteria for promoting the total development of the West Indian child;

. To identify and encourage those indigenous child-rearing practices that will reinforce the child's social and cultural identity and promote cognitive development;

. To promote the development of materials that are relevant to the West Indian setting;

. To develop guidelines and approaches to training and education of parents and substitute care-givers;

. To develop care-giving models that will stimulate the child's physical, social, psychological, and intellectual development and from which selections can be made on the basis of a model relevant to different sociocultural and economic settings;

. To feed into other care-giving agencies materials that will stimulate concern for the total development of the child;

. To work with and through existing national programs so that the greatest number of preschool children with the greatest need can be served in the shortest possible time; and

. To identify, assess, and mobilize all available resources -- local, national, and international -- for the promotion of the centre's function.

The functions of the centre are:

. To operate a day-care unit for training and research. This unit provides services for children from low-income areas, August Town and Hermitage, near which the centre is sited;

. To train supervisors of day-care centres from all participating countries;

. To facilitate studies in child development in the Caribbean through an interdisciplinary approach that will develop ways of meeting the total needs of young children with special emphasis on the social, intellectual, and emotional aspects, and nutritional and health needs;

. To provide field-work placements for students of the University of the West Indies interested in the problems and needs of preschool children;

. To organize seminars for personnel at a policymaking level from the participating countries;

. To undertake comparative studies in early-childhood development to help in the creation of appropriate services for children in the region;

. To develop parent-education and home-visiting programs;

. To operate a book- and toy-lending library as an aid to parent education and as a means of providing stimulation for the children in the pilot communities;

. To make available to participating countries results of studies and other findings that will help them to strengthen their preschool child services; and

. To establish guidelines as a basis for the evaluation of the project.

The centre is administered through the Inter-Faculty Committee, which consists of members from all faculties and departments in the university, whose functions and expertise have relevance to the development of the preschool child. Information from these departments forms an important basis from which the programs of the centre are developed.

The programs are designed to develop traditional and indigenous models for care-giving facilities for preschool children, parent-education programs including educational materials for parents and substitutes, a body of research findings, and training programs for all levels of care-givers in the different models. Through these programs, a pool of resource information is developed by the centre that can be shared with the other Caribbean programs.

Channels of communication with each territory in the project are established by means of:

. Periodic workshops with national trainers and coordinators of each territory. Assistance in planning programs is based on priorities set by these coordinators. The centre offers assistance and guidance in response to the needs of each territory.

. Training of personnel in care-giving facilities with special emphasis on the training of supervisors. Supervisors are prepared to assist in in-service training programs as well as to increase their proficiency in whatever services they offer.

The professional staff of the centre consists of supervisory and training personnel, a social worker, a research fellow, and a director. The professional staff have, in addition to their local roles in the centre, regional commitments to the programs in the other Caribbean territories.

The guidelines for the research program of the centre are:

. To review the relevant work in the Caribbean and its implications for the continued study of child development in the region;

. To undertake research to understand the nature of the psychological and social development of preschool children in the English-speaking Caribbean and of those factors influencing this development;

. To formulate objectives and goals in child development that are consistent with the findings derived from the research;

. To develop methods of implementing the objectives formulated; and

. To publish and disseminate research results and the demonstrated techniques.

Research that has been undertaken by the Research Unit of the centre since its establishment in 1976 includes:

. Survey to identify research needs in the Caribbean and also to test the feasibility of using a mail questionnaire for data gathering

. A survey of local communities

. The do-and-learn project

. The curriculum project

. Survey of preschool settings

. Investigation of cognitive-motivational development of infants aged 2 months to 2 years

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From these research activities a number of developments have taken place: the Book Production Program, "Baby Pat," Film -- "Play and Developments," and Tape -- "Communicating with Children."

The basis of the **Book Production Program** was a short study involving content analysis of a sample of children's literature at the Regional Preschool Child-Development Centre and observations of children's interaction with story content and pictorial image. This study was carried out in the Day-Care Unit at the centre. Essentially, the greater proportion of the written material available is quite removed from the children's experience. Children interact more with content and pictorial images that reflect some element of familiarity. In their interaction, they engage in the desirable activity of expanding imagery and verbal productions.

As might be expected, the children try to make associations between the impressions they form interacting with the literature and those that come from their everyday experience. However, the process of making connections from images and stories to concrete reference in experience is often disjunctive. There is no continuity between the images perceived in pictures and the mental images that children create and identify as they try to associate pictorial images with the things that are recognizable in their experience: for example, a lamppost on the sidewalk in New York became a tree described in considerable detail. These observations stimulated expression of the need to develop children's literature that projects local experience. The result is the Book Production Program.

The plan of the program is to produce books for preschool children at different age levels. Although stories, nursery rhymes, etc. are welcome from persons interested in writing for children, the responsibility for producing literature is borne by the centre staff in the first place. Production by the centre staff began with selections from themes that relate to a number of behaviour areas and developmental tasks with which children must deal. To date, output from this program has been "Friends" by Rose Davies, "Stories for pre-school children" and "Nursery rhymes for pre-school children" by Celia Kennedy, and "Can Save count to ten" and "My ABC of flowers and plants" by Millicent Itall.

"Baby Pat" by Ena Watson represents another development from research. The content of this book is based on information from the research on infant development. It represents activities that are highly stimulating for infants and that are recognizable as part of the ongoing interchange with young children in both families and communities.

The film **"Play and Developments"** deals with development through the first 3 years. It incorporates information from research. The setting for this film is a local community. The film is directed at two levels of audience -- trainees and the general public.

The production of the tape **"Communicating with Children"** was stimulated by the experience of the Curriculum Project and also by the earlier experiences of maintaining a stimulation program for infants at the Day-Care Unit. It is being produced for trainees.

Two further developments are being planned as a result of the research:

. Photographs of activities and materials from the home-visiting segment of the research with infants are to be taped for use in the "Communicating with Children" activity.
. A program in infant stimulation has been proposed.

The centre has also attempted to disseminate some of its research findings through mimeograph papers distributed through the project to preschool services in all the participating countries.

The research program of the centre was set back by the resignation of the Research Fellow in 1980. Although a new appointment was made, to be effective from 1 September 1981, the centre was without the services of a Research Fellow for 1 year.

Caribbean Education Development Project

The Caribbean Education Development Project is a complex operation involving the 14 English-speaking Caribbean governments, the University of the West Indies, the Caribbean Examinations Council, and USAID.

In 1977, a USAID team conducted a survey of the educational sector in the Eastern Caribbean. This was followed by a concept paper submitted to USAID in 1978 by the University of the West Indies describing their experience in primary-school curriculum development with several countries in the Eastern Caribbean and indicating how those ongoing efforts to improve content and methods of teaching might be intensified and brought to include more Caribbean countries. At about the same time, the Caribbean Examinations Council submitted a proposal to USAID requesting support for their secondary-school program of testing, syllabus preparation, and materials development throughout the region. These two proposals together with the recognized need to improve the physical condition and capacity of primary-school buildings in the less-developed Caribbean countries led to a USAID decision to prepare a project. This consisted of three subprojects to be implemented by the University of the West Indies, the Caribbean Examinations Council, and the Caribbean Development Bank (CDB). The project was approved for a total of US$9.96 million and grant agreements with the UWI, CXC, and CDB were signed in June 1979.

The three subprojects are Primary-School Curriculum Development, Secondary-School Curriculum Development, and Primary-School Construction/Rehabilitation. There is a project office related to each subproject and a regional office that coordinates the entire project.

The regional and subproject offices all have professional staff. Of these, nine have training in educational research: three to the doctoral level, four to the master's level, and two just below the master's level. Eight of the nine officers concerned are nationals of the region.

The project is mainly developmental, based on a priori assumptions. Although attention has been paid to research relevant to the various areas, the project itself is not research oriented. A small sum, US$290,000, could be used for research purposes where these relate to the solution of particular problems encountered in a particular subproject.

Primary-School Curriculum-Development Subproject

Purpose: To improve the learning environment for the primary-school age group (7-11 years of age) throughout the region. To strengthen the UWI School of Education, thus enabling it to expand its ongoing assistance to the territories in their efforts to improve their educational programs.

Subject coverage: Language arts, mathematics, social studies, and science.

School coverage: Five pilot schools per territory.

Area coverage: Antigua, Barbados, Belize, British Virgin Islands, Dominica, Grenada, Jamaica, Montserrat, St Kitts-Nevis, St Lucia, and St Vincent.

Major activities: Revision of syllabuses, curriculum units, and teachers' guides; development of low-cost teacher and pupil materials; redirection of teaching methods from rote memorization to project work and other child-centred activities; introduction of classroom evaluation and testing to supplement sole reliance on terminal exams; and administrative training for head teachers, principals, and supervisors.

Method of operation: Regional workshops for territorial subject-matter specialists in relation to activities listed; workshops run by above specialists for 45 persons from pilot schools of each territory; shorter local workshops between territorial workshops on a more frequent basis; regional workshops conducted by UWI who assists territories in planning, coordinating, implementing, and evaluating territorial and local workshops; and territorial Project Implementation Units (PIU) responsible for territorial and local workshops and follow-up activities in pilot schools.

Management: Each PIU has a full-time Project Implementation Officer reporting to the Chief Education Officer (CEO). The CEOs of each territory or their designees form a Project Advisory Group that meets periodically with UWI staff to review progress. UWI provides staff to work on overall program development and project management and appoints a full-time project coordinator. Outside technical assistance is available on a selected basis.

Expectation: That each participating country will organize a functioning, active PIU and appoint a well qualified fulltime Project Implementation Officer to direct its activities; provide space for workshops; designate pilot schools; and release teachers and selected subject-matter specialists for workshops. That a plan will be developed for low-cost dissemination of materials and training of teachers in their use and will be put into effect.

Cost: A sum of US$3.796 million has been granted to UWI as the implementing agent to carry out the purposes and activities of this project.

Anticipated outputs:

. New curriculum guides in the language arts, science, mathematics, and social studies consisting of syllabuses, teachers' manuals, and pupils' workbooks that have been tested in the territorial schools and found to be teachable and relevant to the Caribbean region.

. Additional teaching aids and materials related to the new syllabuses and curriculum units that will assist the implementation of modern methods.

. A modified refined model for the curriculum process including manuals for administrators that provide guidance for organizing and administering curriculum-development projects.

. A group of teachers and supervisors with experience and skill in curriculum development, testing, and dissemination who will be able to continue such action after the close of the project.

. Teachers trained to understand, select, and use teaching strategies appropriate to the new curricula including appropriate materials and methods.

. A group of teachers trained to develop, evaluate, use, and disseminate modern instructional materials.

. Teachers capable of using project work, continuous evaluation, and child-centred activity in the classroom in appropriate learning situations.

. Head teachers, principals, and supervisors with improved administrative skills.

. Improved learning by students resulting from new teaching materials and methods being applied by the teachers.

Secondary-School Curriculum-Development Subproject

Purpose: To improve the quality of the curriculum and instructional approaches used in secondary schools; and to strengthen the Caribbean Examinations Council in its efforts to develop syllabuses and curricula for secondary schools in the region.

Target audience: Upper Secondary, Forms Four and Five.

Subject coverage: Core subjects -- English, history, geography, mathematics, and Spanish -- and subjects for intensive treatment -- business education, agricultural science, home economics, integrated science, social studies, and technical drawing.

Teacher coverage: Approximately 2500.

Area coverage: 14 English-speaking states.

Major activities: Improve existing syllabuses and develop new ones; develop and distribute materials supporting these syllabuses for teachers and students; train teachers in the use of syllabuses and materials and in newer methods of teaching; teach and implement school-based assessment methods; produce and administer CXC exams for a larger segment of the secondary-school population; and develop a CXC data-processing facility to score and report exam results.

Method of operation: Regional workshops on subject-matter and instructional-materials development, subject reviews, testing, and school-based assessment techniques; and subregional and territorial workshops to reach larger numbers of teachers.

Management: Existing CXC panels; central CXC/UWI/UG management committee with CXC registrar as director; full-time project coordinator post created (CXC assistant registrar); territories provide teachers for workshops and select local coordinator to promote project work in territory; and outside technical assistance available on a selected basis.

Expectation: CXC member countries will continue to provide support to CXC and project results will be disseminated to all schools.

Cost: A sum of US$2.619 million has been granted to CXC as project-implementing agent to carry out the purposes and activities of this project.

Primary-School Construction/Rehabilitation Subproject

Purpose: To improve the physical facilities and physical environment of selected primary schools.

Target audience: 5- to 11-year age group.

School coverage: About 16 construction/rehabilitation activities within eight countries.

Area coverage: Leeward and Windward Islands and Belize.

Major activities: Matching grants to each country, up to US$25,000 over 3 years, to implement plans for improved school maintenance; preparation and distribution of a maintenance manual and supplementary materials for common use in all countries; self-help syllabus on techniques of community participation in school construction and maintenance; country-level workshops that will include concepts and practices of effective school maintenance, and self-help for ministry and primary-school personnel; and selected activities of construction or rehabilitation, or both, of primary schools.

Method of operation: Establishment of fund at CDB to finance and manage proposed activities; CDB review, modification, and approval of countries' school-maintenance plans and ongoing monitoring of maintenance-systems' implementation; CDB coordination of educational-specifications development for integration into regional educational planning; and CDB approval of country construction/rehabilitation funding proposals and supervision of their execution and completion.

Management: CDB central resource personnel responsible for project planning and final design, contract oversight, and program supervision; CDB territorial personnel inspect, certify, and report on subproject activities; and advisory group composed of involved permanent secretaries, CDB officials, and USAID representatives meet quarterly to review status of activities.

Expectation: That each participating country will have adopted and implemented a maintenance/improvement plan for all primary schools; that each country will have identified and taken action upon the greatest priority primary-school facility needs, to the extent that country and CDB resources permit; and that other donors will make a long-term commitment to the CDB fund for school-plant construction and rehabilitation.

Cost: A USAID contribution to the CDB fund of US$3.545 million is contemplated.

The Caribbean Food and Nutrition Institute

CFNI is a regional organization sponsored by the Pan American Health Organization (PAHO). Its headquarters is located on the Mona Campus of the university and the Institute has officers in other territories. Of its funding, 50% comes from PAHO, 15% from the 17 Caribbean member governments, and 35% from other international agencies.

The functions of the Institute are to give direct services to member governments in the field of food and nutrition, train personnel in these areas, collect and exchange information, mount a public education program, and conduct research.

Agencies that have assisted the Institute with grants are Ford Foundation, USAID, William Waterman Fund, UNICEF, World Health Organization (WHO), and the Rockefeller Foundation.

The Institute is managed by an advisory committee composed of members from the participating governments, the University of the West Indies, and PAHO.

Research projects carried out by the Institute in the field of education are:

- Guidelines for incorporating nutrition into basic and postgraduate nursing education
- Handbook for trainers and supervisors of preschool teachers: Nutrition modules in the training of such teachers
- Integration of nutrition education into primary-school curriculum: Grade 1 and 2 nutrition for children

- Nutritional status of children in the Caribbean, 1969 to the present
- Evaluation of the school feeding program in Kingston, Jamaica

Projects currently in progress are:

- Development of a school feeding program in Barbados
- Development of a school feeding program in Trinidad
- Testing of materials used in public nutrition-education programs

In addition to this project work, CFNI operates the CFNI Information Service on nutrition. This service includes a newsletter called "Nyam News." The objective of this service is to share information gained on nutrition with all the member governments and the institutions in those territories.

Although CFNI is not primarily engaged in education or educational research, it is involved partially and constitutes an important resource in the development and evaluation of nutrition programs and in research involving technical knowledge and understanding about nutrition and nutrition education. Increasingly, governments are recognizing that an effective nutrition program in school plays an effective part in school attendance, especially in the context of the current economic recession being experienced by almost all Caribbean states. The nutritional status of children is of increasing concern. The Institute is in a pivotal position to assist in the development of adequate programs in the region.

Comment

The two regional projects and the regional institution described are important parts of the educational-research capacity in the English-speaking Caribbean. Between them, they employ 23 researchers. Each is important to the research enterprise for a different reason.

The Regional Preschool Project constitutes the single most important entity in the Caribbean region in the development of preschool education. Although other projects and organizations are involved with preschool education and the preschool child, this is by far the best organized and most adequately funded and this project is most likely to have a regional impact.

The model in operation in this project is the classic one of a service operation being informed and guided by a research and development unit. The Regional Preschool Centre at Mona is the research and development nucleus playing a pivotal and influential role in guiding the operations of the preschool services that constitute the project in each of the other member states. In this model, there is constant communication and feedback between the operational units providing the service and the research and development unit developing the programs, materials, and strategies. This model needs to be examined closely because it could be applicable and effective in areas other than preschool.

The Caribbean Education Development Project is of importance to this exercise not so much because of its research content but for the uniqueness of the particular model that has been worked out. It is a large project serving the entire English-speaking Caribbean. It involves 14 national governments, three regional organizations, and an external funding agency. The project constitutes an interesting mechanism through which collaboration and cooperation have been organized among these separate and different entities. The core staff members of the centre at the regional coordinating level, the subproject offices, and the national units are almost entirely nationals of the region. The number of nonnationals representing experts and consultants has been kept to a minimum. In effect, it is a project being executed by the nationals of the Caribbean.

One of the intentions of the project is to strengthen both regional and national institutional capacity: the University of the West Indies and the Caribbean Examinations Council as regional bodies serving the various national governments. At the same time, it is building the capacity at the local or national level to organize curriculum development, develop materials, disseminate and test new strategies, and train teachers in the use of such strategies. It is an extremely ambitious program that needs to be carefully analyzed and evaluated because, if it is successful, it could constitute a model for regional and national institution-building in other areas of education.

Because of the uniqueness of the Caribbean region in terms of its geography, politics, economics, and sociology, international agencies seeking to operate within this region must keep looking for effective strategies. The Caribbean Education Development Project constitutes a new and interesting development as a regional strategy.

CFNI is an important resource in a specialist area. Nutrition is of increasing importance and concern in the region. As a regional body, it works with national governments in the traditional way, and with other regional bodies such as the university. Because of its mode of operation, it cannot initiate action of itself but must respond to the needs as identified by member governments. CFNI is, therefore, not as interesting in terms of its regional organization as it is from the point of view of the specialist expertise that it represents within the region.

TRAINING OF EDUCATIONAL RESEARCHERS

The training of educational researchers in the English-speaking Caribbean is one of the functions of the higher-degrees programs of the universities in the region. Both universities have developed master's programs in education. That at the University of Guyana has not been consolidated and is not an ongoing activity of the Faculty of Education. However, the program of the School of Education, University of the West Indies at Mona, is well established. On a more modest, but nevertheless firm basis, the School of Education at Mona has also established a doctoral program in education.

Although these higher-degrees programs have sought to serve a variety of needs for top-level personnel in the educational systems of the Caribbean, training in research has been an integral part of the programs: the course in research methods has been mandatory for all students and must be passed before a student can proceed to the thesis requirement. The University of the West Indies' program originally offered only a research-oriented Master of Arts in Education degree. Recently, it has also offered the Master of Education degree, which is more course-oriented and requires a less rigorous dissertation.

The higher-degrees program at the University of the West Indies has followed the British tradition very closely. Candidates at the master's level must be graduates with professional training in education. The program covers 2 years, the first being devoted to coursework with an end-of-year examination that students must pass before proceeding to the second year in which the research project is carried out and the thesis written. In the Master of Education option, students do further courses in the second year as well as the dissertation. In the Master of Arts in Education option, the thesis must provide evidence that the student has mastered research techniques and skills relevant to the topic investigated as well as demonstrated originality and significant substance in the knowledge generated in the exercise. The thesis is examined by a panel of three internal examiners, including the supervisor, and an external examiner from another university. The external examiner, whose judgment is final, is required to be a recognized authority in the field in which the candidate has carried out the research. The student is required to defend the thesis in an oral examination with a panel of examiners.

The Doctorate in Education is a minimum of 2 years beyond the master's level. There is no further coursework and formal lectures. Through personal tutorials with a tutor and agreed reading, the candidate develops a research project on which he or she writes a thesis. The pattern of examination used for the doctorate is the same as that used at the master's level.

MASTER'S PROGRAM: FACULTY OF EDUCATION, UNIVERSITY OF GUYANA

In 1976, as a result of a needs-assessment survey done by a number of consultants, the Ministry of Education and the University of

Guyana agreed to mount a Master's in Education program that would be run by consultants from the Ministry of Education who would be assigned to the Faculty of Education of the University of Guyana on a part-time basis. The aim was to bring together persons who were currently employed in the Curriculum Development, Test Development, and Research Units of the Ministry of Education with promising individuals within the educational system, who could fill future positions, to upgrade their skills in the areas of measurement and evaluation, curriculum development, and research. The ministry consultants, who were university professors, were to act as advisers to the respective units of the Ministry of Education and help in the development of these units. The units, in fact, were to provide a laboratory setting in which the theoretical program taught at the university could be given a practical context by the interaction of the students and the tutor in the actual work setting. It was also intended for the consultants to use this period to direct these units to the areas of national needs identified in the survey and to attempt to develop the training program from a task-oriented point of view.

In attempting to train personnel in this way, a number of important benefits were expected to occur:

. There would not be the disruption of the work situation by taking the individuals away from their jobs.

. It would be far less costly to bring a team of competent university professors to Guyana to staff such a program than to send a sufficient number of students abroad. In fact, it was shown that 30 students could be trained in Guyana for the cost of sending five abroad.

. Because this program was developed in the local setting, it was possible to train individuals so that they were conscious of the national needs and also of the particular context in which their work had to be effective.

. The university professors teaching the courses would act as consultants to the Ministry of Education, ensuring that the jobs for which they were training the individuals would in fact be done in accordance with the instruction in the courses.

This program was implemented in September 1976 and came to an end in August 1978. The personnel who were trained in this program were selected from the Test Development, Curriculum Development, and Research Units and teachers' colleges and secondary schools in Guyana. A total of 28 persons were selected for training. The training program was located in the Faculty of Education of the University of Guyana and successful graduates were awarded a Master's in Education degree of the University of Guyana. The consultants -- professors teaching the program -- were from the University of the West Indies and from the Ontario Institute for Studies in Education (OISE) and York University in Canada.

Each professor was assigned a consultancy role to the particular unit of the ministry for which he was working. The program consisted of a core that included the following courses: foundations of curriculum, psychology of learning and teaching with special reference to development and socialization of Guyanese and West Indian children, research design and methodology, educational statistics, and educational and psychological measurement.

In addition, there were four specialized course options from which individuals had to choose two. These courses were curriculum evaluation, affective assessment, educational and psychological measurement (advanced), and applied multivariate analysis.

The courses were organized in the first year of the program. During the second year, students had to write a substantial dissertation based on research that had been done in some area or with respect to the development of curriculum for some particular subject area in the school system. Of the 28 persons who were selected, two left the course after 1 year, one did not complete the thesis, and another was not awarded the degree. Thus, 24 students graduated.

The Government of Guyana was assisted in the mounting of this program by the Commonwealth Fund for Technical Cooperation (CFTC), which provided the salaries and other personal benefits for the consultants.

Although the program was jointly run by the University of Guyana and the Ministry of Education, a number of points of tension existed between the two institutions:

. The Faculty of Education advocated that the consultants who were to teach the courses should be part of the staff of the university and should be based there.
. The Faculty of Education had previously proposed a master's program with the intake of six students per year and were a bit sceptical of selecting 28 persons at one time. They thought that there were too many students and doubted whether the program could effectively service them.
. The Faculty of Education had sought and failed to secure the services of one of the consultants through CFTC. However, the Ministry of Education had succeeded in obtaining his services.
. The consultants were all receiving internationally competitive salaries, which greatly surpassed the salary scales at the university.

Although the intervention of the vice-chancellor of the university cleared the way for the program to be implemented, it did not secure the whole-hearted support of the faculty. Thus, although some lecturers of the faculty wished to upgrade their own level of certification, no one from that faculty used the opportunities for training offered by this program. Therefore, the Ministry of Education was served by the development of staff offered through this program, but the University of Guyana's Faculty of Education did not benefit in a similar manner.

In May 1981, the distribution of the 24 graduates from this program was:

. 4 had migrated from the Caribbean and 20 had remained — 19 in Guyana and 1 in Barbados (currently employed by the Caribbean Examinations Council);
. The remaining 20 were employed in the following areas: 4 in tertiary education, 9 in secondary education, 4 in Ministry of Education, 1 in University of Guyana, 1 in a public statutory body, and 1 in a regional body.
. 4 of the graduates of this program were then employed in the three research institutions mentioned in this survey, in capacities that would allow them to carry out research.

Over the period concerned, migration of academics and intellectuals from Guyana had been high. To have retained 83% of the graduates after almost 3 years would seem to be an achievement. Of the 20 graduates remaining in the Caribbean, 12 have received promotions in their jobs since graduating.

Since the termination of this special program, the University of Guyana has not been able to continue a master's program. It is currently considering reopening this program and hoped to be able to admit some students in September 1981. It is, therefore, safe to say that the persons trained through the master's program in the University of Guyana and who are currently holding a master's degree from that university have been trained in a special program with a limited duration and that a master's program on a continuing basis is still to be implemented in Guyana.

HIGHER-DEGREES PROGRAM: SCHOOL OF EDUCATION, UNIVERSITY OF THE WEST INDIES, MONA

The Higher-degrees Program of the School of Education, Mona, started in October 1964. The intention of the program was to train professionals for the educational system in the English-speaking Caribbean. At the start, the program was the responsibility of the Department of Education, now the Teaching Section of the School of Education. This has changed and the responsibility now lies with the Research and Higher Degrees Section.

Course Structure

The entry requirements to the master's program are that the prospective candidate should have a bachelor's degree from a recognized university, initial professional training in education, and at least 3 years teaching experience. Persons possessing a Bachelor of Arts degree, for example, in history or in languages, or correspondingly someone with a Bachelor of Science degree in the social or natural sciences, must have successfully completed the 1-year postgraduate Diploma in Education, which offers initial professional training. Persons holding a bachelor's degree in education are allowed to proceed to the master's program directly. The program is of 2 years duration. In the first year, the candidates must complete a number of courses including research methods and the area in which they hope to pursue their research interest. All candidates must pursue three courses in the first year and sit an exam in each at the end of the year. Candidates opting to do the Master's in Education are required to do further coursework and a dissertation. Those wishing to pursue the Master of Arts in Education, which is the research route, must obtain a mark of at least B in the research methods paper and be recommended by their supervisor as someone who is capable of pursuing original research in the particular area.

The thesis requirement is that the individual must pursue original research and in so doing learn, at first hand, various research techniques including instrument building, sampling, collection of data in the field, and the analysis and interpretation of data. The completed thesis is examined by a panel of internal and external examiners as described previously. To qualify for the Doctorate in Education, the candidate must have successfully completed the Master of Arts in Education.

The areas in which it is possible to pursue a master's or doctoral degree are psychology, philosophy, educational development in Third World countries, measurement and evaluation, educational administration, history of education, and such curriculum areas as science, mathematics, Spanish, history, and English. The staff of the Research and Higher Degrees Section is mainly responsible for the postgraduate programs. However, they cannot adequately teach all the areas concerned and, therefore, they are helped on a part-time basis by staff members in the rest of the School of Education. This is true both with respect to the teaching of the various courses as well as the supervision of students.

Student Enrollment and Graduates

For the academic year 1981-82, 124 students enrolled in the master's program and 15 in the doctoral, most on a part-time basis. The majority of the students are Jamaicans. To allow part-time attendance, courses are offered in the evenings between 5:00 and 8:00 pm from Monday to Friday.

Since 1964, 55 degrees have been granted: 48 from the master's program and 7 from the doctoral (Table 1). Because two of the students who completed the doctoral program had previously completed the master's, the actual number of persons who have graduated is 53 and not 55. The number of graduates per year had increased steadily since initiation of the program.

Of the doctoral and master's graduates, 81% have remained in the Caribbean (Table 2). It should be noted that, of the five graduates from the master's and doctoral programs who have migrated, only one was West Indian. The other four were expatriates, who during their tenure in Jamaica, read for either master's or doctorate degrees. Three were English and have returned to England and one was Canadian and has returned to Canada: two were from the doctoral program and

Table 1. Number of graduates.

Year	Master's	Doctorate[a]
1964-70	6	1
1971-74	6	1
1975-78	14	3
1979-81	22	2

[a] Four candidates who had submitted their doctoral theses but had not been granted their degrees at the time these data were collected are not recorded either as being enrolled in the program or as having graduated.

Table 2. Retention of graduates in the Caribbean.

	Master's	Doctorate
Total number of graduates	48	7
Graduates remaining in the Caribbean	41	5
Graduates studying in North America	3	0
Graduates who have migrated	3	2
Graduates deceased	1	0

two from the master's program. So far, all the graduates from the master's program who have gone to North America to read for a doctorate have returned on the completion of their courses. This very high retention of graduates in the region should be noted against the background that Jamaica experienced its highest outflow of professionals during the last 5 years.

Comment

In the period 1964-81, the School of Education at Mona has succeeded in establishing and consolidating both master's and doctoral programs in education. After a relatively slow start, these programs are beginning to produce a steady flow of graduates each year. The program offered has a reasonably good research base and has been one of the sources that provides staff for the university itself. One of the major drawbacks of the program is that there is not a great deal of support for students enrolled in it. Most are enrolled on a part-time basis and must undertake this program of training while they are carrying out their normal jobs. This is a great burden and leads to frustration on the part of many who reach the statutory limit of 7 years without completing their program. The drop-out rate is also relatively high. On average, it takes a part-time student 4-5 years to complete either the master's or doctorate degree.

There are not many postgraduate scholarship awards because higher degrees are not a priority of the university. The higher-degrees program is left largely to staff members and the students who are motivated and interested. The university itself suffers by having its master's and doctoral students enrolled on a part-time basis, because its staff are not able to benefit from full-time students acting as teaching assistants, research assistants, and supervisors of students enrolled in undergraduate programs. Although these activities would help the postgraduate students to learn several skills in the position of apprentices, it would also help to relieve staff members of some of their time-consuming routines.

The policy of the university is to place priority on the undergraduate programs in all the faculties, including the School of Education. Higher degrees are accorded a secondary place in planning and provisions. The usual expectation is that 85% of a faculty's students would be enrolled in undergraduate programs and only 15% for higher degrees. In the academic year 1981-82, the School of Education had about 30% of its students enrolled for higher degrees. This is the direct result of the demand for such programs by students and the willingness of staff to accommodate this demand: it is not related to central university policy or encouragement. The student demand occurs because several promotional opportunities would be opened to them through successful completion of a master's or doctoral program.

A positive and encouraging sign is that the majority of the graduates of higher-degree programs in the Caribbean have remained in the region. When one recognizes that most of these graduates are Jamaicans and Guyanese and that there has been a great exodus of professionals from these two countries over the last 5 years, the retention rate of graduates is impressive. It would seem to suggest that investments in this area are very worthwhile both for the graduates learning particular research and other skills within the cultural context in which they will practice and for the region.

A limitation that should be noted is that the University of the

West Indies program has mainly served Jamaica and the number of students from the rest of the Caribbean has been relatively small. If this program is to have a regional impact, then ways to increase enrollments from the rest of the Caribbean are needed or the School of Education in St Augustine and in Cave Hill must start similar programs. It should also be noted that graduates of the master's and doctoral programs from the University of the West Indies have won recognition from North American institutions for the standard of work achieved. This is also noted in the favourable comments made by external examiners from North American and British institutions.

It should also be noted that, although the master's and doctoral programs have made a reasonably good start, they by no means address the need for suitably qualified top-level personnel in the educational systems of the region. If, for example, one feels that the principals of secondary institutions in the region should have master's degrees in administration, then it should be noted that there are about 10 graduates in educational administration compared to over 400 secondary and tertiary institutions in the Caribbean. When the needs of the various institutions in the region are considered, one recognizes that there is great need to expand this program significantly. This will not happen, however, without a change in the policies of both the governments of the region and the universities themselves. A higher priority should be accorded to second- and third-degree training.

REGIONAL PERSPECTIVES

In this chapter, I consider the English-speaking Caribbean from a regional perspective. In doing so, there will be some analysis, establishment of patterns, identification of gaps and weaknesses, and recognition of strengths. Although the 14 states in the English-speaking Caribbean share a common history, culture, language, and geographical setting, there is a reasonable amount of diversity in the region. The common core of shared experiences makes it possible to treat the English-speaking Caribbean as an entity. However, its diversity makes it necessary for adjustments and variations to recognize the distinctiveness of different territories.

One fact that must be considered is that all the Caribbean states are not at the same stage of development in every facet of national life. Further, development in a single territory is not uniform in all sectors. In one sector, a territory may be ahead of all the others and, in another sector, it may lag behind. This lack of uniformity of development in a single territory and within the region as a whole makes it necessary to consider the stage of development for the subject under discussion whenever decisions are being made about the Caribbean as a whole.

An example of this can be taken from the fact that, in the area of functional literacy, Barbados may lead the rest of the English-speaking Caribbean while Jamaica lags behind the region as a whole in this area. In the field of technical education, however, Jamaica may be ahead of the region with Barbados among those territories that lag behind.

STAGES OF DEVELOPMENT OF STATES

The object of this exercise has been to look at the area of educational research. Not all Caribbean states are at the same stage of development in the building of institutional research capacity in education. The eight less-developed states -- Antigua, Belize, Dominica, Grenada, Montserrat, St Kitts-Nevis, St Lucia, and St Vincent -- have little in the way of educational research capacity. Through their teacher-education programs, teachers are sensitized to educational research. There are some tutors in the teachers' colleges in these states and some officers in the Ministries of Education who have been trained professionally in educational research. These persons are, however, not doing any research. There is only one small private institution in St Lucia that is actually doing educational research and BELCAST in Belize that is likely to include research in its operation. Educational research capacity in these states is almost nonexistent. They are also near the zero-level stage of the development of research capacity in education.

At the next level is the Bahamas where two institutions, the College of the Bahamas and the Ministry of Education, have been trying to institutionalize educational research. There are persons who have been trained in educational research and are permitted to do research. Time and funding is given to these persons to execute research projects. However, their research efforts are secondary to their primary, service, functions. Although libraries and computing facilities are available, these support services are not integrally linked with the research process. At the moment, data processing is either being done manually or by university computing centres in the USA with which the researcher has a relationship, usually because it is his or her alma mater. At the moment, there are no links to information systems nor are any information networks established. For the research process to be fully institutionalized in the Bahamas, linkages must be made with the existing support services and additional support services established.

At the next stage are Barbados and Guyana. In Barbados, research institutions have been established and the necessary support services are in place. Links between educational institutions and the support services have been made. However, the level of research output is low. This is principally because of the burden of service duties, inadequate funding, and understaffing of the research institutions. Although an educational research enterprise exists, the constraints upon it render its level of output relatively low.

Guyana is at the same stage of development as Barbados but for different reasons. Although the level of research output in Guyana has been higher, the research enterprise appears to be suffering like the rest of the educational system, and indeed the whole society, from a general malaise and low morale. There are problems resulting from the loss of skilled personnel and the inability to replace those persons because of the current levels of salary. There is uncertainty with respect to the establishment of the Research Unit at the Ministry of Education and a general lack of funding to carry out projects. There is no question, however, that a research enterprise exists in terms of institutional base, support services, links between the support services and the research institutional base, and the presence of trained researchers who have been doing educational research.

At the next stage is Trinidad where a research enterprise exists and there are institutions set aside to conduct research. These institutions are not encumbered with other service functions. The outputs from these institutions have been significant and they have begun to make an impact upon educational policy and practice. However, the research enterprise is small and its range of interests and activities have been limited to linguistics, curriculum, and social-science questions.

At the next level of development is Jamaica. The major difference between Jamaica and Trinidad is that the research enterprise in Jamaica is larger and more diversified. All the institutional support infrastructure is in place and linked to the educational research institutions. The number of researchers in Jamaica is almost as many as the rest of the Caribbean combined. In addition, on the average, the researchers are more highly qualified, the range of interests wider, and their experience in research greater than that of their colleagues in the rest of the region.

Having identified five different levels of educational research enterprise, it is important to note that not even in Jamaica has a stage of educational research development been reached that could be compared with the industrialized societies. The educational research institutions are not "lead institutions" within the educational system -- that is, they are not, invariably, the places from which educational leadership comes. Although this is true in some areas, for example, in language research and testing and measurement, it is certainly not true in other areas.

There is a minimum amount of team research or large-scale research projects tackling national problems in a multidisciplinary way. There is very little experimental research and only a few instances of longitudinal research. If one could develop a scale of educational research development along a continuum ranging from virtually nothing to a fully functioning research enterprise providing leadership in educational thought, policy, and practice, giving services in the areas of decision-making and evaluation, and providing necessary support in the production of new materials and information for training, then Jamaica is probably at the midpoint of that continuum with the countries of the less-developed Caribbean at the starting point and Bahamas, Barbados, Guyana, and Trinidad at various points in between.

RESEARCH INSTITUTIONS

There are 22 institutions engaged in some type of educational research in the English-speaking Caribbean (Table 3). The largest concentration of institutions is in Jamaica. Of the 22 institutions, 11 or 50% are based in either a university or a college (Table 4).

Although research is being done in 22 institutions, in many of these there are several different sections, units, or departments engaged in educational research so that 42 "units" are involved (Table 5). Of these, only 7 units have educational research as their major and primary responsibility. Five units are related entirely to social-science research, but some of them have been working on educational issues as well. These five plus the seven already mentioned are the units in the Caribbean that are totally research oriented. All the other units are involved in research in a secondary way.

From the information contained in Tables 3-5, several points should be noted.

. The institutional capacity in educational research in the English-speaking Caribbean is built around a small core of

Table 3. Distribution of research institutions by countries.

Country	Institutions Number	Institutions Percentage
Jamaica	8	36.4
Barbados	5	22.7
Guyana	3	13.6
Trinidad	3	13.6
Bahamas	2	9.1
Eastern Caribbean	1	4.6
Total	22	100.0

Table 4. Parent institutions of research organization in the different countries.

Parent Institution	Country Bahamas	 Barbados	 Eastern Caribbean	 Guyana	 Jamaica	 Trinidad	 Total
University	-	2	-	2	3	2	9
College	1	-	-	-	1	-	2
Ministry of Education	1	1	-	1	1	1	5
Other ministry	-	1	-	-	-	-	1
Regional body	-	1	-	-	1	-	2
Private/Other	-	-	1	-	2	-	3
Total	2	5	1	3	8	3	22

Table 5. Type of research units.

Major function of unit	Number of units
Educational research (only)	7
Social-science research	5
Teaching	7
Curriculum development	6
Measurement, evaluation, and testing	4
Planning	3
Nutrition education	2
Special education	2
Preschool education	1
Social welfare services	1
Psychological services	1
Teacher education	1
Medical research	2

institutions: the seven strictly educational-research units and the five social science-research units.

. The institutional educational research capacity is located in two types of settings: tertiary institutions, that is, either a university or a college, and Ministries of Education. The greater capacity exists in the tertiary institutions with the government capacity being smaller but nevertheless very significant.

. Because of the confidentiality barriers that often exist in ministries and the possibility of political inference, the major efforts at building capacity in the future should be concentrated on tertiary institutions.

. Although recognizing that it is the universities that are traditionally expected to nurture research, it is essential to note that, in the Caribbean, not all of the states will have university campuses. Where there is no university campus, if capacity is built it certainly has to be related to tertiary institutions in those territories. There is justification for this even where university campuses exist. Tertiary institutions, especially teachers' colleges, can make a significant contribution to research if their terms of reference, staffing, and organization are redefined to include research.

. In advocating the concentration of research in tertiary institutions, it is assumed that research will receive its fullest development in a setting in which those persons responsible for policy, decision-making, and control are at a distance from those evaluating, assessing, inventing, and pioneering new ideas. Again, research will have a better chance of developing where there is some autonomy and some sense of freedom from directives.

From the history of the region, it would appear that educational research owes its genesis and continued growth and development to the development of university education in the region. Any new efforts to build capacity must consider this factor and widen it to include other tertiary institutions. The College of the Bahamas is an excellent example of research being grafted onto work at a college in a country where there is no university presence to promote and develop research. BELCAST in Belize shows signs of developing in the same direction.

RESEARCHERS

There are 370 persons identified in this survey who have received training in educational research and are engaged in some way in educational research in the English-speaking Caribbean (Table 6). Almost half of them are located in Jamaica.

The majority of researchers are employed in universities or colleges (Table 7) and almost as many are employed by Ministries of Education. Most researchers in the Caribbean are not engaged full time in educational research (Table 8) and they have some other responsibilities. Most are employed in teaching, the next largest number are involved in curriculum development, and the third group in social-science research. The researchers employed in institutions that are fully engaged in educational research as their prime responsibilities constitute the fourth largest group of researchers.

It is not possible to give a very accurate picture of the number of researchers in the Caribbean who hold doctorates. It is safe to say, however, that for the entire region less than 20% have doctorates but the majority of researchers in the region are trained to the master's level. Probably, 10-15% have not obtained the master's

Table 6. Distribution of education researchers in the Caribbean by country.

Country	Researchers	
	Number	Percentage
Jamaica	177	47.8
Guyana	59	16.0
Barbados	46	12.4
Trinidad	52	14.1
Bahamas	33	8.9
Eastern Caribbean	3	0.8
Total	370	100.0

Table 7. Distribution of researchers by type of parent institution.

Parent Institution	Country Bahamas	Barbados	Eastern Caribbean	Guyana	Jamaica	Trinidad	Total
University	-	21	-	38	78	20	157
College	10	-	-	-	10	-	20
Ministry of Education	23	10	-	21	72	32	158
Other ministry	-	5	-	-	-	-	5
Regional body	-	10	-	-	14	-	24
Private/other	-	-	3	-	3	-	6
Total	33	46	3	59	177	52	370

Table 8. Number of researchers in the various types of units.

Major function of unit	Number of researchers
Educational research (only)	30
Social-science research	46
Teaching	103
Curriculum development	87
Measurement, evaluation, and testing	22
Planning	16
Nutrition education	18
Special education	12
Preschool education	1
Social welfare services	12
Psychological services	7
Teacher education	8
Medical research	8

degree. The areas of research skill that are quite strong in the region are survey, curriculum, correlation, and linguistic research. The areas of weakness are classroom observation, experimental, longitudinal, and action research.

It would appear that the needs of the researchers would be well served if the training programs at the master's and doctoral levels in the Caribbean were strengthened. The institutions offering this kind of training would need to pay particular attention to educational research. In addition to formal training, short-term ad hoc courses are needed in research design and techniques in the areas that are currently weak. Such training could be related to projects.

The most viable training program in the region is that at the School of Education, Mona. However, the part-time nature of this program and the absence of scholarships and financial support for students restrict its availability to Jamaicans. Although it would appear that the master's program is a good one and gives a good grounding in educational research, the doctoral program appears to need strengthening. The traditional British pattern, which requires no further coursework at this level, is inadequate in the context of the Caribbean. The skills and competencies of candidates at the doctoral level could be strengthened with further coursework.

On this basis, researchers and research would benefit considerably if the following steps were taken:

. Financial assistance and scholarships should be available to students in both the master's and doctoral programs so that a number of persons could pursue higher degrees on a full-time basis;
. Master's in Education programs should be established at the School of Education, St Augustine, the University of Guyana, and the School of Education, Cave Hill;
. A coursework element, accounting for at least 6 months of the 2-year period, should be added to the doctoral program with specific emphasis on research design, methodology, and courses related to the areas of specialization of the candidates;
. Consultants should be employed for a 2- or 3-year period in areas of research skill and competence that are lacking or weak in the Caribbean to train personnel at both the master's and doctoral levels in these methodologies and techniques;
. Full-time doctoral students should be developed as teaching and research assistants to relieve the teaching burden of established researchers; and
. The consultants, during the period of their tenure in the Caribbean, should be engaged in short-term training courses for existing researchers related to new projects being implemented.

In the first instance, students for this doctoral program should be drawn from persons who already have obtained a master's degree and are working in the field of educational research in the various institutions. If about 50% of researchers in the region were trained to the doctoral level and attention was given to the present areas of weakness by providing additional training, educational research would be considerably strengthened.

Some attention should be given by researchers themselves to the means by which they could come together as a professional group and discuss common professional issues across disciplines. Although there is need for researchers to safeguard and be interested in their own discipline, the disciplinary approach of educational research in the Caribbean at the moment is an isolating factor. Interchange and exchange of ideas across disciplines is needed because, for many problems, a multidisciplinary approach is necessary. Several alternatives present themselves. There is the possibility of educational researchers' conferences on a periodic basis, establishment of an association of some kind, and establishment of a secretariat that, through newsletters and other mechanisms, could keep researchers in the Caribbean informed about what fellow researchers are doing. Whatever the strategy employed, such communication and contact are needed.

At a meeting of a group of educational researchers in Barbados on 12-16 January 1981, the deans of the School of Education, University of the West Indies, and the Faculty of Education, University of Guyana, were charged with promoting discussion of this matter in their separate spheres of influence and meeting subsequently to determine how some kind of permanent collaboration could be achieved between educational researchers. If followed up, this should result in some tangible proposals.

STUDIES AND PROJECTS

Research activities yielding some kind of findings with implications for further study, practice, or policy emanate from two main sources: the work of projects undertaken by researchers in educational research institutions and the product of studies by students at various levels of the tertiary education system.

The following can be observed about research studies being done by research institutions:

. The type of studies varies considerably -- some are basic research and do not lead to immediate application; others are applied and yield results with implications for a particular setting. Still others are part of intervention programs where the research attempts to allow for the assessment of the appropriateness of the strategies employed, the extent to which the objectives are being achieved, and the contribution of various elements to the results obtained.

. There is no consistency throughout the Caribbean with respect to the question of relevance -- where relevance is interpreted to mean the congruence between the research done and national concerns as identified by policymakers and practitioners. In Barbados, Guyana, and Trinidad, most research studies seem to relate directly to the concerns of practitioners and policymakers, i.e., it is applied research. In Jamaica and the Bahamas, however, this is certainly not always the case. The particular interest of the researchers, especially within the university, seems to be the operative concern, and the research is more basic. This dichotomy between applied and basic research is a false one because basic research is needed before good applied research can be done.

. There is evidence, especially in Jamaica where research has been going on for about 30 years, that some research studies have an impact on policy and affect the practice of teachers and administrators in the field. Miller (1978) documents the relationship between language and linguistic research at the School of Education in Mona and language-arts curriculum policy of the Ministry of Education of Jamaica. It is equally true to say that some research has had little impact on practice and none on policy.

. Time seems to be an important factor in assessing the impact of any research study on policy and practice. In the case quoted above, Miller noted that it took 14 years between the start of the language and linguistic research at Mona and the implementation of curriculum materials and policy in Jamaican schools. A similar set of circumstances can be quoted for Trinidad where the time lag was 8 years. The time between the start of research and pay-off in either policy or practice in the field may be much longer than is considered desirable. It would appear that this is a matter for study and consideration because the urgency of the development issues and the survival concerns of the society generate a considerable amount of impatience in waiting for research results. The question is, does it have to take that long? If not, what are the critical factors that can be manipulated to shorten the time?

. Most of the research studies being done are individual efforts. Little team research has been done or is in progress. Projects are usually small, the results are limited, and, by and large, do not have wide application in the system.

Research studies emanating from the teaching enterprise at the tertiary level are from six sources: studies of students in the final year in teachers' colleges, in the Certificate in Education and

Bachelor of Education programs, and in the Diploma of Education course, and theses of Master of Arts, Master of Education, and Doctorate students.

The number of studies produced from these sources each year certainly is greater than the number of studies from research institutions. Because these studies are submitted in partial fulfillment of graduation requirements, a certain standard of work, adjusted to the level of the student, is required. The general question raised by studies from research institutions and from students in training concerns the quality of these studies. Little critical review and assessment of the quality of research studies has been done in the Caribbean. Invariably, when any new thesis or study is written, some reference is made to work that has gone before but there is usually very little critical assessment and analysis of the results that have been obtained. There is a serious need in the Caribbean for a research review group set up along similar lines to IDRC's Research Review and Advisory Group (RRAG).

A regional body set up with experienced researchers could be charged with the following terms of reference:

. To commission state-of-the-art reviews in various areas in which research has been done in the English-speaking Caribbean, and through these reviews to identify strengths and weaknesses in content and methodology and also to identify gaps as well as promising results that require further investigation or indicate important insights for policymakers and practitioners;

. To disseminate these reviews and such studies that have been identified as being of good quality and deserving of wide exposure;

. To translate such reviews and studies into nontechnical terms that are understandable by policymakers and practitioners;

. To commission case studies to examine the ways in which research has influenced policy and practice in the region;

. To establish dialogue and discussions with researchers and research institutions in the region with a view to developing a research agenda for nations and the region as a whole; and

. To act as a clearing house between institutions and agencies working in the field of educational research in the region.

Some group is needed to draw educational research in the region together not from the point of view of control but from the point of view of identifying work of quality, setting the direction, and stimulating dissemination to the various audiences that would benefit from educational research. At present, Jamaica is the only country in the region with any organized body charged with giving some overall guidance to educational research. Jamaica has an Educational Research Council set up by the Ministry of Education to advise government on its policies and programs in research and to ensure collaboration between all persons working in educational research in Jamaica. This council is composed of researchers from the Ministry of Education and the university and is actually chaired by a university person. In the rest of the region, probably with the exception of Guyana where policy is determined by the Ministry of Education, educational research proceeds in a very laissez-faire manner.

RESEARCH STYLES

In examining the work of the 22 research institutions in the

English-speaking Caribbean, several patterns or styles of research can be identified. The comments on these patterns are not, in any sense, a value judgment, they simply note that research results yielded through studies conducted in the region are emerging from activities done in various styles and for various purposes.

In the basic research pattern, an individual pursues an idea that is mainly the creation of his or her own intellect and interest. The result has no immediate application although, taken to its logical conclusion in a particular setting, it could yield answers to particular problems. At best, in practical terms, it is a long shot. An example of this is the study "Dread talk: The language of Rastafarians in Jamaica." This type of research study is esoteric. It is perceived as a luxury, pursued by persons who may be somewhat quaint but at least not immediately encumbered by the practical necessities of survival.

In the applied or engineering research pattern, an individual or group has worked out an idea or an approach. It has been logically deduced from some basic research and tested on a small scale within a particular setting and has proved successful. The individual or group is then allowed to implement the model or the strategy throughout the system, progressing on a phased basis through pilot projects. An example of this is the language-materials workshop developing curriculum and curriculum materials for the Ministry of Education for use in Grades 1-3 at the primary-school level.

Following the research and development pattern, research strategies lead to materials and procedures concerning a particular service. Through the research and development activities, new policies and procedures are established for the delivery of the particular service in a particular situation and setting. Examples of this pattern are the "Regional preschool project" and the nutrition-education service offered by the National Nutrition Centre in Barbados. In this pattern, research and development activities and operation of the service are integrally related with research providing inspiration, leadership, guidance, and strategies for operation of the service. In other words, research is the primary determining factor and operation of the service is the ultimate result.

In the research service pattern, a client, generally a Ministry of Education, comes with concerns and needs to professionals, a research unit of a university, and requests research services related to those concerns. The unit accepts a contract from the client to deliver these services for a fee and proceeds to do so. Examples of this are the evaluation of the shift system requested by the Ministry of Education in Jamaica and carried out by the Research and Higher-Degrees Section of the School of Education at Mona and the "Primary science curriculum project" requested by the Ministry of Education in Trinidad and Tobago and carried out by the School of Education at St Augustine.

In the support service pattern, some activity is being carried out based on some a priori assumptions. However, research is used to provide information to ensure that the objectives are being achieved and that the various elements are contributing to the achievement of goals, or to determine that the particular inputs are justified. Much of the research done in the area of curriculum and planning are of this style.

Research emerges as a bonus in the spin-off pattern because the investigator was performing some other activity as the primary responsibility. For example, in the performance of social-work duties, case studies are done to meet the needs of the various clients; however, these case studies form the basis of research concerning the kind of problems experienced by children and families in attending school. Another area in which this emerges is in the conduct of examinations and in the psychological testing of children who may be experiencing difficulties in learning various subjects in school.

SUPPORT INSTITUTIONS

Although support services have been established to facilitate educational research in the region (Table 9) and although, in many instances, the support services are in no way hindering the current level of educational research being done in a particular territory, there can be no question that significant improvement in educational research will not occur either in quantity and quality without substantial improvement in the existing services. Each major support infrastructural element must be discussed separately.

Libraries

Looked at across the region, the library services are probably the best-developed single infrastructural element. With specific reference to educational research, Trinidad appears to have the best service and the Bahamas the poorest. However, none of the services in existence could be regarded as being adequate for educational research of significant quantity and quality. The total number of books in stock, the number of periodical titles subscribed to in the field of educational research, the space provided for educational researchers, and the services given all need significant increase and improvement. The most urgent case is that of the Bahamas.

Documentation Services

There is only one educational documentation centre in the

Table 9. Support infrastructure for research.

	Infrastructural elements					
Country	Research libraries	Documentation centres	Computer centres	Information networks	Links to data bases	Journals
Bahamas	2	1	1	-	-	2
Barbados	1	-	2	-	1	4
Belize	-	-	-	-	-	2
Eastern Caribbean	-	-	-	-	-	-
Guyana	1	-	3	-	-	4
Jamaica	3	1	2	1	1	11
Trinidad	2	-	2	-	1	8
Total	9	2	10	1	3	31

English-speaking Caribbean at the moment. This is located on the Mona Campus. Because this centre doubles as the faculty library, it has been unable to develop as an adequate documentation centre within the space and staff constraints. Expansion and improvement of the centre at Mona are needed and similar centres must be established in the other major research centres in the Caribbean. These documentation centres could become the focal point of national information networks designed to share educational information in the form of primary source materials, theses, studies, and research reports. These centres could then be linked regionally so that a regional network of educational information is developed. A system could develop along the lines of the DOERS system now being developed for social-science researchers in the region.

The only such information network that exists nationally is SECIN in Jamaica, which brings together socioeconomic information that includes education. In the development of documentation services and national and regional information networks, the key personnel for discussion and inputs into such a system would be the information specialists in the region.

Computer Facilities

With the exception of the University Computing Centre at Cave Hill, the hardware that currently exists apparently has the capacity to provide the data-processing needs of the educational research now and, probably, for the next 5 years.

The greatest problems lie in the area of software. In this regard, the need for the development of packages and programs related to the analysis of data generated in linguistic and language research is serious. There are instances, for example, in the work of Carrington in Trinidad, where a project has been held up for as long as 2 years because of the inadequacy of software and programing skills to develop many more statistical packages than are currently available in the region. The most widely used package is SPSS and the tendency is for researchers to stick to the analytic tools available in this package even where they may have limitations for the particular study being carried out. Because of the limited personnel available for programing and systems analysis in the region, it would seem that software development must proceed in such a way as to make it possible for researchers to do their own computing analysis directly without the need of specialists. Such programs have been developed in North America over the last 20 years but none of these packages and programs are currently available in the Caribbean. At the moment, only two types of machines are in use in the Caribbean: the IBM 370 series and the ICL 1900 series. It should be possible for software, developed along these lines, to be used regionally and adjusted for these two types of machines.

In addition to the problems of software, researchers in the Caribbean generally have not been trained in basic computing skills and a significant number are lacking in these skills. Therefore, some basic training is needed in this area. This would be a particular necessity if software were developed as suggested.

Link to Information Systems

At the moment, Jamaica has the only fully functioning computer-terminal link to data bases in North America. Currently

CARIRI in Trinidad is upgrading its Telex link to a terminal link so that researchers in Trinidad will also enjoy a similar service to those in Jamaica. The Caribbean Development Bank (CDB) in Barbados is about to institute a similar service there. In Guyana and the Bahamas, there are no links nor are there plans to implement such a service in the near future. This, however, is a need in both of those territories. If a regional information network is developed in the area of education, it is hardly likely that such a system could be developed on a purely manual basis. At the moment, the University of the West Indies and USAID are looking at the feasibility of establishing satellite telecommunication linkages between the various English-speaking Caribbean territories for university teaching, meetings, and other communication purposes. Automated national information networks in the various Caribbean territories could be linked by the same telecommunication system to share educational information.

JOURNALS

There are 28 journals published in the Caribbean that report research findings to different audiences (Table 10). Most of these journals are published in Trinidad and Jamaica. If we ignore those journals that are mainly dedicated to the publication of social-science research and those that are multidisciplinary and dedicated to the nonspecialist, journals solely dedicated to the publication of education results number only 15.

Most of the journals available for publication of educational-research findings are dedicated to the practioners (Table 11). Those directed to the informed nonspecialist or policymaker and technical journals in which researchers communicate with colleague researchers are in the minority.

Journals published in the Caribbean generally have a circulation of less than 500 (Table 12). These are small journals published with part-time, voluntary assistance with circulation usually limited to a particular territory. Only 10 journals in the region have either wide regional or wide international circulation. In many instances, the journal published in a particular territory is not known or read outside of that territory.

Although, through the 1970s, there has been an increase in the growth of indigenous literature, the education research-related

Table 10. Educational research journals in the Caribbean.

Country	Journals publishing research	
	Including education	Only education
Bahamas	2	2
Barbados	4	1
Belize	2	0
Guyana	4	1
Jamaica	11	7
Trinidad	8	4
Total	31	15

Table 11. Audience reached by journals.

Country	Audience		
	Researchers	Practitioners	Informed nonspecialist
Bahamas	1	1	0
Barbados	1	1	2
Belize	1	0	1
Guyana	2	1	1
Jamaica	4	5	2
Trinidad	2	5	1
Total	11	13	7

Table 12. Circulation of journals.

Circulation	Journals	
	Number	Percentage
Below 500	15	48.4
501-1000	7	22.6
1001-1500	4	12.9
1501-2000	1	3.2
Over 2000	4	12.9
Total	31	100.0

journals are highly restricted in providing communication between researchers in the region. The growth of such journals is a positive sign of increased activity in the field of education and educational research and a growing tendency of educators to communicate with each other through local journals. However, the fact remains that the indigenous literature is still in its infancy, that there is room for considerable growth and expansion, and that the permanency of this enterprise is not entirely assured. The larger publications, such as **Social and Economic Studies**, **Caribbean Quarterly**, and **Caribbean Journal of Education**, have been recognized by the university for purposes of promotions and appointments. This is a significant development because the tendency in the past was only to accord status and recognition to research that was published in journals of developed countries. With the recognition of some Caribbean journals for this purpose, Caribbean researchers are encouraged to report their findings locally in the setting in which it has been produced and in which, hopefully, it should have effect. However, many researchers in the Caribbean still publish their research results in foreign journals. By no means all the research done in the region, or even the majority, is published locally. In many instances, there are good reasons for this lack of local publication: the majority of journals in the region are behind schedule, some of them by a considerable period. Thus it is sometimes easier to have results published abroad.

A preliminary and rather quick survey of the research papers contained in the technical journals reporting educational research in the region reveals the following:

- Fewer papers are published each year than work is done. Many research projects only record and disseminate their results in mimeograph papers with limited circulation. Only a minority of the research efforts are actually published. This is taking into account the fact that many research papers are published in journals outside the region.
- There is no common theme or concerns that seem to unify or give coherence to the various research papers. The wide diversity of concerns and interests shows strong individualism in the researchers.
- Most frequently, the papers are concerned with deficiencies in Caribbean society and education as measured against yardsticks imported from outside the region or within the context of some foreign paradigm.
- Some papers show weakness in communication skills on the part of researchers, especially with respect to reporting their findings with thoroughness, clarity, and conciseness.
- The inadequacy of the library and documentation service facilities, and in some cases the lack of links to information systems, are demonstrated in the written papers because the published literature is inadequately represented or an author's preliminary papers are cited without mention of a subsequent modification of stated positions.
- Some papers exhibit methodological weaknesses with respect to sampling, treatment of different variables, use of instruments (which are generally imported and modified in a number of insignificant ways), and overdependence on paper-and-pencil techniques in which the major source of information is the response of the subjects being investigated. In many instances, sufficient safeguards are not taken against the ways in which the statements of respondents may deviate from the actual reality. Because of some of these weaknesses, there is often a risk that generalizations will be made outside the prescribed setting in which the research was done. Again, in several instances, there are weaknesses in the interpretation of results because variables that could influence the phenomena being investigated were not included in the research or were treated inadequately.
- The general impression given in most research papers is that the researchers have rather slavishly followed ideas, paradigms, procedures, and approaches that have developed in First-World settings. On the whole, there is a lack of ingenuity, inventiveness, and originality. The major bias of researchers in the Caribbean appears to be probing questions that have already been answered elsewhere but for which the Caribbean version has not yet been described.

FUNDING

At the beginning of the institutionalization process, educational research was funded principally from two sources, the University of the West Indies and international funding agencies. Although this pattern continues, the commitment of the university has increased significantly at the same time as that of funding agencies has decreased. In addition, governments have become involved in research in a more direct way in providing both core and project funding.

In the 1960s, funding agencies provided core funding for the establishment of two institutional units, the Institute of Education of the University of the West Indies and the Research Unit of the University of Guyana. Both these institutional units were fully taken over by the respective institutions at the end of the funding period and they are still functioning and performing the roles that were originally established for them by the funding agencies. Although these units are not operating under the same names, having been integrated into the structure of the universities' faculties, the integrity of their operations has been preserved.

One of the weaknesses of the project funding by agencies has been that grants have been made for relatively short periods -- 1, 2, or 3 years. In a few instances, extensions have taken grants to as long as 6 years. The limitation here is that, because of the weak base of research in some areas, work has to be carried on for much longer before the desired objectives are achieved than would usually be the case. This probably is endemic to research itself and may not be a phenomenon restricted to the Caribbean. The lack of congruence between the funding period and the time required to complete a particular process sometimes inhibits and restricts the full accomplishment of various objectives.

Another consideration is that some projects have been implemented by agencies who have ignored work being done in the region and have pitched their efforts far in advance of the particular stage of development of that activity in the region. An example of this is the "Unesco curriculum development and teacher education project." The overall result of such activity is the dissipation of effort and extremely limited success.

Because of the current economic crisis experienced by most Caribbean states, both project and core support for research have been kept to a minimum. Project grants to existing institutions would represent a welcome and needed relief at present. The fact that one government has included educational research as part of a loan package would also seem to indicate that, were such funding available, at least some governments would make use of that facility. If either loan or grant support is given for projects, it would seem advisable that they be made for large-scale multidisciplinary, team projects that are integrated with the training of researchers in the region and include the services of consultants to work for a 2- or 3-year period with the training institutions in developing the research skills in areas of weakness or in which there are gaps at present. The training should include not only prospective but also established researchers who may feel the need to expand and increase their competence.

DISCUSSION

This chapter began with the assertion that the various Caribbean states are at different stages of development with respect to educational research. In conclusion, it is necessary to come back to the concept of stages of development and to identify particular adjustments that would need to be made with respect to countries at different stages of development.

In the smaller Eastern Caribbean states, research would need to be coordinated projects in which personnel are assigned to different islands working out of central headquarters, say in Barbados. The model of the "Caribbean education development project" being funded by USAID would seem to be the kind of structure that could be adopted for research projects in these states. Because the teachers' colleges represent the highest level of institutional development and, at the moment, include research methods in their programs, it might be appropriate for project individuals to be related to teachers' colleges.

In the Bahamas, the most urgent need would be to ensure that the support services are upgraded and the formal links made among the educational research institutions in that country. From the institutional point of view, special attention would need to be given to the establishment of research in the College of the Bahamas. One possibility is the creation of a department of the college whose sole responsibility would be research and development activities. Apart from having a core staff, the department could have attachments on a part-time basis from individuals in the teaching departments.

In Barbados, some reorganization of responsibilities between the Research and Development Section and the Teaching Section of the School of Education is needed. If these duties are rationalized and the Research and Development Section is strengthened in terms of staff numbers, the same project funding would permit a significant amount of work to be done in Barbados and in the Eastern Caribbean states. It is also necessary to establish the Master's in Education program at Cave Hill to give training to persons in such bodies as the Caribbean Examinations Council, the university itself, the teacher-training institutions, high schools, and the Ministry of Education.

In Guyana, the institutional infrastructure is in place. It is hoped that the government will make official the existence of the Research Unit in the Ministry of Education. The most urgent need is probably international project funding that should boost morale and possibly mobilize energies and efforts into new directions. It would also be necessary to strengthen the support services especially in the library, documentation, and information areas. It is also necessary to consolidate a continuous program in the training at the master's level in Guyana with the same kind of personnel as was described for Barbados, and that is currently being served by the program at Mona.

In Trinidad, the most urgent need would appear to be the expansion of the Research and Development Section of the School of Education to include areas of research other than linguistics and curriculum development. Significant diversification and expansion, integrated with project funding, would constitute a qualitative improvement and change in the development of educational research in Trinidad. Also linked to this expansion should be the training of researchers at the master's level on an official basis in the School of Education. This could be done with very little additional effort and organization.

In Jamaica, the need is for multidisciplinary team research. Project funding linked to existing institutions could provide this element. Based on the record so far, the building of capacity both in the Ministry of Education and at the tertiary level apparently would be warranted because the Ministry of Education has adopted a rather liberal and enlightened approach to the conduct of research in that institution. It would be necessary to strengthen the higher-degrees program by including funding to allow for a high proportion of full-time students. The strengthening would be particularly needed at the doctoral level, which could serve the entire Caribbean region. In other words, the master's programs in Barbados, Guyana, and Trinidad could initially feed the doctoral program at Mona until those other institutions could introduce training at the doctoral level.

In Barbados, Guyana, Trinidad, and Jamaica, it is necessary to improve and increase the dialogue currently taking place between educational and social-science researchers. It would seem that joint projects are greatly needed at present.

Researchers in the Caribbean need to be persuaded to come together in some kind of association. This could start at the national level with loose regional linkages. Whatever the format, there is a need to create a research community that will make researchers conscious of each other and give them the means of communicating on professional matters.

Regional activity and projects centred along these lines should contribute significantly to the continued development of educational research capacity in the English-speaking Caribbean.

RESEARCH, POLICY, AND PRACTICE: EXPERIENCE AND ISSUES

A detailed description has been given in the previous chapters of the institutional structures that exist for research and the support services that facilitate the conduct of research in the English-speaking Caribbean. The Caribbean now has a trained cadre of its own nationals who are capable educational researchers. This capability has been established in the relatively short period of 30 years. The question then is: What difference has educational research made to policy, practice, or performance in any of the territories in the English-speaking Caribbean? If it is possible to identify research that has made a difference, is there anything that we can learn from those experiences that could be generalized? In addition, are any issues raised by these experiences that all those involved with educational research should examine?

These questions in themselves warrant research projects to yield comprehensive answers. One can give a very straightforward and simple answer to the question "Has research made a difference to policy and practice in education in the Caribbean" by replying "yes." To answer the second and third questions, however, it is necessary to critically examine some of these instances.

Thus, in this chapter, I describe five cases in which research has made a difference to educational policy and practice, one case having been documented in "Language teaching, research, and language arts curriculum: A Jamaican case study" (Miller 1978). Care is taken to indicate issues and questions raised by these cases that warrant continued discussion and debate in the educational community in the Caribbean as well as among interested agencies and institutions.

Curriculum research has been one of the major areas of specialization in the Caribbean over the last 20 years. Accordingly, three of the cases relate to curriculum, one to early-childhood education, and one to the selection of students for high school.

Of three cases of curriculum-research projects described, two involve linguistic and language-teaching research, one from Jamaica and the other from Trinidad. Because of the similarity, the Jamaican case is described in detail and the Trinidad case discussed in contrast. The third case is from Barbados and the Windward and Leeward Islands and involves mathematics-curriculum research.

LINGUISTICS AND LANGUAGE-TEACHING RESEARCH IN JAMAICA

The genesis of the research described here was in the policy of the Jamaican government in 1957 to integrate primary and secondary systems, to base access to high-school education on merit and not on the ability of parents to pay, and to ensure through a free-place system that children from lower-class backgrounds were able to attend high school if they were selected through the Common Entrance Examination.

This meant that, for the first time, a significant number of lower-class children, who were originally Creole speakers, were now entering high schools. This situation posed new problems for the teaching of English in high schools. Craig (1969) states:

> For the past 10 years or so, the West Indies have been making special efforts to increase the provision of primary and secondary education. Precise information on the results of these efforts is not yet available but it is quite clear that as education has been extended to children in the lower social levels teaching English has become a formidable problem.

Although people within the lower social classes saw this new development as a great step forward because high-school education is greatly valued by them as a means of upward social mobility, the reaction of the middle and upper classes was that standards were being lowered in high schools. They, therefore, resented the new policy.

Because the government had no intention of reversing its policy, it interpreted the demands made by the middle and upper classes as a call to improve the standard of primary education: the middle and upper classes had argued that, before expanding secondary education, the government should have ensured that the primary base was sound. While this debate was raging, teachers of English complained of the poor quality of English used by the new recruits coming into the high schools through the Common Entrance Examination. The Department of Education of the University of the West Indies, through the Diploma in Education program, was in constant contact with the high schools. Members of the department in the area of language education saw the new debate as an opportunity to become meaningfully involved in the problems of the educational system. First, they began questioning the first-language teaching techniques being used by teachers both at the primary and secondary levels. They pointed out that the language situation in Jamaica was not analogous to that in England because Jamaican children were not native speakers of English. They postulated that the teaching of English in this setting was more analogous to a foreign-language situation and that foreign-language techniques would obtain far better results than first-language techniques. Spearheading this attack on the traditional English-teaching methodology in the school system was John Figueroa, the Head of the English Department, and then Professor of Education.

One of the first practical moves, made by Allen Jones, another member of the Department of Education, was to organize the English teachers into the Jamaica English Teachers' Association. The association was conceived as a professional body to identify common problems facing English teachers in Jamaica and to find solutions to these problems. As such, the association arranged a number of seminars in collaboration with the Department of Education. One of the major efforts of these first years by this alliance was the organization in 1964 of a conference on linguistics and language teaching, which reviewed relevant problems and research findings and discussed the implications of these findings for the teaching of English in Jamaica and the West Indies in general.

In the 1950s, linguists such as Bailey, Cassidy, LePage, and DeCamp, working out of the Faculty of Arts of the university, had done extensive work on the study of the Jamaican Creole. By the beginning of the 1960s, papers and books emanating from this research began to be published. These included "Jamaican Creole" by LePage and DeCamp (1960), "Jamaica Talk" by Cassidy (1961), and "Jamaican Creole syntax" by Bailey (1966).

The language educators in the Department of Education made their criticism of the local language-teaching situation by referring to the implications of the work of these linguists. The major conclusion of these linguists was that the Jamaican Creole has its base in West African languages in terms of morphology and syntax while having a largely English vocabulary. They concluded that it was closely related to a number of other Creoles such as Srahan, Salamakan in Suriname, Goolah in the islands off the coast of South Carolina and Georgia, Krio in Sierra Leone, and Cameroon Creole in West Africa. The coexistence of English and the Creole should not be confused with the situation in England where English is official but several local dialect variations exist, for example, in Yorkshire, Northern England, etc. Although the Creole has a largely English vocabulary, its grammar diverges sharply from that of English. It is a language of its own with its own syntax capable of description and as such is not merely a hodgepodge of incorrect English grammar.

Although the implications of the linguistic research were clear -- that the language-teaching methodology being used in primary and secondary schools was inappropriate in the particular language situation because it used techniques that were appropriate for English monoglots where second-language techniques might be more appropriate -- the university academics were not actually providing practical and specific procedures that had been worked out and proved to be effective.

The new policy of government, linking primary and high schools through a Common Entrance Examination, had created the circumstances for language teaching at the primary level to be examined critically. The linguistic description of the morphology, syntax, and vocabulary of the Jamaican Creole set the general parameters within which this concern for language teaching and language learning could be discussed. What was needed was research to create new and more appropriate models of English teaching within this context and language research that would yield significant insight into the particular strategies and procedures to be employed to promote learning of a standard language in the setting.

The research response to this situation came from Dennis Craig (1963), a newly appointed member of the Department of Education. Craig (1966) developed a model for teaching English that was based on a theoretical classification of the speech of Jamaican children. He classified the English-language patterns of Jamaican children as follows:

. Class A -- patterns known to the child owing to the resemblance of his or her natural speech to English;

. Class B -- patterns known partially to the child and used by him only during periods of stress or in strange, prestige, social situations;

. Class C -- patterns that a child would recognize and comprehend if they were used by others in a meaningful context but which he could not produce; and

. Class D -- patterns totally unknown to the child.

Craig maintained that constructing lessons or teaching materials to take account of this four-stage classification of English patterns that a child needs to be taught is a clear departure from procedures used either for native- or foreign-language teaching although it bears resemblance to both. The resemblance to foreign-language teaching comes about because the teacher needs to limit and control the number of class C and D patterns that are being introduced for teaching. The resemblance to native-language teaching comes about because the teacher, even while concentrating in the foreign-language manner on the teaching of class C and D patterns, has to be aware of the fact that, to maintain the interest of the child and to use the language meaningfully, the subject matter has to be used as freely as possible for its own inherent interest and all of the English in classes A and B, which the child knows in varying degrees already, has to be used at each stage. Accordingly, Craig developed a number of teaching procedures that were consistent with this classification.

. Teachers in their own speech to children should always try to use standard West Indian English except in the case of younger children when communication is impossible because the children are unable to understand standard English. In the latter case, the teacher should use the vernacular of the child until the child achieves the ability to recognize English used in concrete situations.

. The teacher has to accept the natural speech of the child without the inhibiting practice of intermittent correction. Not until specific English patterns are mastered by the child should the teacher insist on the child producing English. Even at this stage, the teacher should insist on only those patterns that have already been learned and mastered.

. Treatment of all classroom subjects should be controlled in such a way that frequent repetition is given to the specific patterns being learned.

. Children should be encouraged to use language in real or imaginary speaking or writing situations that are controlled or guided so as to give frequent practice in the specific patterns aimed at.

The Language-Teaching Project

In 1965-66, Craig tested this model experimentally in a language-teaching project that involved all the children and their teachers in Grades 1, 2, and 3 in 10 schools. Five schools received the experimental treatment whereas the other five served as the control. For the experimental schools, workshops were held for the teachers to train them to operate the new model. In addition, materials and aids consistent with the new methodology were developed through the Caribbean educational publications project and supplied to the teachers. The materials consisted of a teacher's guide and a student's workbook. All schools were visited during the experimental period by a team of supervisors that consisted of Ministry of Education officers, teachers' college lecturers, and the researcher, Craig. The children in all 10 schools were pretested for language achievement at the beginning of the academic year. Tests were also done at the end of 3 months and 6 months. The analysis of the results indicated that, in all areas, both with respect to quantity and quality of language, children in the experimental group had made significant gains over their performance at entry to school and over the performance of children in the control group. The experiment provided empirical support for the efficacy of the model and techniques that had been advocated by Craig.

The Children's Language Project

Although linguists had studied and described the structure of the Jamaican Creole, their analysis and description related to the speech of adults. Although this research was instructive, there was a huge gap as far as educators were concerned because they did not know the exact nature and content of the language that the Creole-speaking child brought to school at age 6 or 7. Craig now moved to fill this gap. He related the dimension of Creole/standard English to the dimension of social class. The research involved in this project related to a comparative analysis of the language of children of primary-school age from various social-class backgrounds. He had no financial support and undertook the entire project out of his own resources. The collection of the data and analysis were pursued between 1966 and 1968. Part of the research was used in his doctoral thesis (Craig 1971).

He sought to test the following hypotheses:

. That social environment determines the purpose for which language is used;

. That social environment determines what cognitive content will be made overt or explicit in language in a given speech situation; and

. That, following from the first two points, children in different social environments will show different habits or biases in the purpose for which they use language and in the cognitive content that is implicit in the language produced.

To test these hypotheses, Craig selected samples of 105 children between the ages of 6.5 and 7.5 years from each of three distinctly separate environments: free primary schools in an exclusively urban lower-class area or an exclusively rural area, and expensive, fee-charging, private preparatory schools with an exclusive upper- and middle-class population.

Samples of children's speech in the different groups were collected and analyzed. The data obtained supported Craig's hypothesis. He found that children from lower- and middle-class settings used different communicative formats. Urban and rural lower-status children used what Craig described as early lexification to a greater extent than their upper social-status peers. Early lexification was defined as a tendency to express a given concept with simpler and more sensually direct vocabulary rather than with a more complex and abstract one.

Assessment of First Efforts

It is important at this stage to review the accomplishment achieved over the 4-year period 1964-68.

. The results of previous linguistic research had been diffused. The general consensus in the light of this research was that the traditional first-language teaching strategies widely used in schools was inappropriate in the teaching of English in Jamaica.

. Craig had developed a new model of language teaching integrating elements of first- and second-language teaching in the unique circumstances of the Jamaican classroom and language situation. This new model had been developed in an empirical way and the results that had been achieved were impressive.

. The new model of teaching confronted the status quo on two significant points. First, it advocated that the child should be allowed to use the Creole in classes where this would allow free expression of ideas about phenomena; and second that, where it was necessary, teachers should also use the Creole to communicate with the child, especially in the earlier grades of the primary school.

. The research had provided data that had exploded the myth held by a wide cross section of teachers and the public at large that the Creole was incorrect English: this had no bearing on the problems of teaching English.

. Through the children's language project, part of which was used for his doctoral degree, Craig had moved to provide needed information on the structure of the language of children from different social settings at the time of entry to primary school -- that is, at age 6 or 7 years.

. Craig was now recognized as a language researcher of stature. He had won the respect of his university colleagues, of training-college tutors, of Ministry of Education personnel, and of teachers in the field.

. Craig had begun to disseminate the results of his research through the courses he taught in the School of Education, especially the language-education course in the Master's of Education program.

. The impact of the research in the language-teaching project done in St Catherine was not consolidated. At the end of the experiment, Craig's presence and assistance to the schools was effectively removed. The Caribbean education publications project folded. As a result, materials produced were not reprinted and the teachers had to resort to the traditional materials and sources for obtaining books for schools. Thus the impact of the school in St Catherine was mainly in terms of a higher level of awareness on the part of the teachers and the acquisition of some skills that they could continue to use in the teaching of language in their classes. The results of the experiment did not have an immediate impact outside the five schools in which it was done.

The Esso Grant

Early in 1969, Esso Jamaica Limited made £4000/year available to the Institute of Education for research with young children. The acting director of the Institute decided to make this sum available to Craig for research on the language of children at the basic-school stage, that is, ages 4-6 years. This was significant because it was the first time that Craig had received a direct grant for research. Through this modest grant, he was able to employ research assistants for the first time. Craig used the grant to continue his research on children's language, concentrating on the languages of 4- and 5-year-olds.

Development of Linguistics at University of the West Indies

Another of the outcomes of the 1964 conference on linguistics and language teaching was the establishment of an informal interfaculty committee on linguistics within the university. This committee was established in 1965 and undertook as one of its tasks the development of a plan for teaching linguistics in the university, generation of research in linguistics, and application of linguistics-research results to educational problems especially at the primary level.

A 6-year plan was developed and submitted to the vice chancellor of the university who approached the Ford Foundation in 1966 as a possible source of financing. In 1969, the Ford Foundation accepted the 6-year plan and agreed to provide financing to implement it. In accepting the plan, the foundation agreed to make three 2-year grants available to the university. The first grant, 1969-71, was concerned mainly with staff development and the establishment of the teaching of linguistics within the university. The second and third grants, 1971-73 and 1973-75, focused on research and materials production. The whole plan was called "The Caribbean Language Research Project" and had components on all three campuses.

The areas of research focused on were:

- Surveys of language usage on which realistic norms for schools could be based;
- Identification of speech differences that correlate to socioeconomic variables;
- Descriptive analysis of Creole languages; and
- Study of language-learning processes with special reference to the phenomenon of interference between Creole dialect and standard English.

For this case study, I refer only to that segment of the project that was carried out at Mona -- which I call the "Mona Project."

"The Mona Project" had four components: sociolinguistic research, psycholinguistic research, research on teacher's language, and the Language Materials Workshop. All four components of the project were coordinated by Craig who was the project leader. The grant allowed for the employment of full-time personnel and, for the first time, the creation of a research team.

Main Areas of Work

Linguistic variation in the speech of Jamaican children: Although Creole is used throughout Jamaica, there are definite variations according to geographical areas. These variations were studied among children of the 6- to 12-year-old age group.

Language variation of teachers in training: This study, apart from describing the language of teachers'-college students, also attempted to look at the educational implication both for the teaching of these students in college as well as their professional activities within the school as teachers. Whereas previous operations had assumed the competence of the teacher in language, this study attempted to describe that competence empirically.

Psycholinguistic research: An attempt was made to develop a language and cognition test.

Language Materials Workshop: The intention was to develop educational materials for classroom situations based on the research that had been conducted previously as well as the research in progress. Craig was assisted with the supervisory responsibility of the Language Materials Workshop by Wilson, his colleague in linguistics and language teaching in the School of Education. The Language Materials Workshop was established in 1972.

Review of the Island Readers Series

Primary schools in Jamaica, through the action of the Ministry of Education, had been using the Island Readers Series for a number of years. This set of readers was based on first-language teaching approaches such as the "Look and Say" method. In 1972, the Publication Branch of the ministry set up a special committee to review the series. This committee was composed of members who belonged to the interfaculty subcommittee on linguistics of the university, ministry officers who had worked closely with Craig in his experiment in St Catherine, and teachers from the Jamaica English Teachers' Association who had been involved in the conferences, workshops, and discussions on the need to change the approach that was being used in schools. This committee held three meetings and recommended to the ministry that the publishers of the Island Readers Series be asked to revise the series and incorporate in it some of the approaches and strategies that had been researched and worked out in the local situation. The Ministry of Education had discussions with the publishers but they were reluctant to carry out this revision.

The ministry decided that the Island Readers Series should be phased out. Almost simultaneously with this decision, Craig and Wilson approached the Chief Education Officer with the suggestion that the Language Materials Workshop be supported by the ministry and mandated to produce materials for Grades 1-3 to replace the Island Readers Series. It should not be assumed that it was automatic that, having decided that the Island Readers Series should be phased out, the ministry would commission the Language Materials Workshop to produce the new readers for Grades 1-3. In fact, commercial publishers had already approached three officers of the Ministry of Education who had prepared readers, workbooks, and teachers' guides for local consumption. A decision could easily have been reached that one of the series that had already been produced by the officers of the ministry should be used to replace the Island Readers Series. It would appear that the following were the crucial factors that tilted the scales in favour of the Language Materials Workshop.

. The materials produced would have a solid research base both in interpreting the local language situation as well as meeting some of the constraints of the Jamaican primary schools. No other series had this research base.

. The achievements of Craig with respect to both the language-teaching project and the Caribbean education publications project were well recognized. The materials produced through the latter were highly regarded by all the professionals in the field although their publication had ceased because the Caribbean educational publications project had folded. The teachers who had used these books were continually making requests to have reprints.

. The Chief Education Officer, himself a language specialist, had been one of those officers of the Ministry of Education who had been engaged with Craig in the experiment in St Catherine. He had personal and intimate knowledge of the results of that experiment.

. Both the primary supervision and English-curriculum sections of the ministry were in agreement with this decision although they had not been a party to it. This again was principally because Craig had been involved in the various committees set up by these two sections dealing with language-arts curriculum at the primary level. A number of them had been students of Craig at the university in the Master's of Education program.

Although the commissioning of the Language Materials Workshop to produce the new readers and materials for Grades 1-3 was basically a Publications Branch decision, it had to have the approval of the

Curriculum Section of the Ministry of Education and the senior officers of the ministry because the language-arts materials to be developed by the Language Materials Workshop would in fact be defining the language-arts curriculum in primary schools in Grades 1-3. The decision was taken in late 1972 to commission the Language Materials Workshop to produce curriculum materials for Grades 1-3 of the primary schools. The ministry provided funding at the rate of $10,000/year from its Curriculum Development Thrust budget.

The Language Materials Workshop

It is instructive to look at the methodology used by the Language Materials Workshop in developing the Grades 1-3 curriculum and supporting materials.

- The researchers would meet with the writer and develop scope and sequence charts that would define the topic and the structures to be covered each term in the areas of reading, writing, listening, and speaking.
- They would determine the exercises to be done.
- The writer would then interpret these agreed definitions by writing lesson plans on the exercises.
- The entire group would meet again to go through the materials developed by the writer to ensure that the materials met the agreed definitions.
- The writer would then rework the materials.
- The researchers would check the rewritten materials.
- The materials were then duplicated and sent to certified pilot schools that had been selected in conjunction with the Ministry of Education for the testing and trial of the materials. This was to ensure that the materials were effective within the context of the classroom.
- Along with the pupils' materials and teachers' guides, questionnaires were sent to the teachers who used the materials for them to make comments. These questionnaires were returned to the Language Materials Workshop.
- After analyzing the test results and feedback from the teachers in the pilot schools, further rewriting would be done. The group as a whole would vet these changes very closely.
- The revised materials would then be sent to the schools for further testing in the next year to ensure efficacy and effectiveness.
- The writer and researchers met with teachers in the pilot schools twice each term in specially organized workshops.

The system devised was basically to ensure that the materials and curriculum produced were consistent with all the research that had been done previously. Through the Children's Language Project, Craig had developed a detailed description of the language of 6- and 7-year-old Jamaicans at the point of entry to the primary school system and through the Language Teaching Project, he had developed a model for teaching language in the Jamaican situation. The task here was to produce a curriculum and with it supporting materials of teachers' guides, student readers, student workbooks, and supplementary readers that would improve the knowledge of the children's language within the context of the new teaching model. Although the method adopted by the workshop ensured the transformation of the research findings into language curriculum and materials, it was slow and tedious. The writer observed that, although it was stimulating intellectually, it was painful and fatiguing physically.

The Curriculum Development Thrust

In 1972, there was a change of government in Jamaica. One of the first programs of educational reform undertaken by the new government was curriculum reform at the primary level. It established a working party, divided into four groups, that was asked to describe the outcomes of 9 years of education in the following terms: what should pupils be able to do, know, and feel as a result of 9 years of education?

Each group met independently over a period of 5 weeks and each developed its own answers to the questions posed. Four programs were then submitted to the Ministry of Education. After several meetings, a common program was agreed on. It was also agreed to establish a structure in the ministry called the Curriculum Development Thrust that would be charged with the responsibility of implementing this program. The general plan of implementation was:

. New curricula would be introduced in Grades 1 and 6 in 1973, in Grades 2 and 7 in 1974, Grades 3 and 8 in 1975, Grades 4 and 9 in 1976, and Grade 5 in 1977.

. Consultation would continue with the working party and the teachers at the various grade levels to determine the skills, knowledge, insights, and attitudes that should be developed at each grade in the light of the new overall goals that had been set.

. Members of the working party and teachers at the various grade levels would be asked to say how they would know and what evidence they would take that the pupils at the particular grade level had achieved the learning described. This plan was approved by parliament and appropriate funding provided.

It is necessary to realize that, by September 1973, both the Curriculum Development Thrust and the Language Materials Workshop were producing curriculum materials for Grade 1 simultaneously. The Curriculum Development Thrust was charged with the responsibility of producing the total curriculum for Grade 1 whereas the Language Materials Workshop was responsible for the language-arts curriculum. The operational compromise that was reached was that the Grade 1, 2, and 3 coordinators of the Curriculum Development Thrust, beginning with the Grade 1 coordinator in 1973, would take the materials developed by the Language Materials Workshop and modify and incorporate them into the Grade 1 program being developed by the Curriculum Development Thrust. This would ensure that, when the Language Materials Workshop had produced the final written materials for Grades 1, 2, and 3, the procedures and patterns of the new approach would have been incorporated by the Curriculum Development Thrust in its own development. The director of the Curriculum Development Thrust had wanted the ministry simply to reproduce the materials being produced by the workshop for 15 pilot schools for all 800 primary schools in the country. The Language Materials Workshop protested this position because the logistical problems of producing such a volume of materials regularly was beyond the capability of either the Language Materials Workshop or the Curriculum Development Thrust at that time. It should be noted that the style and pace of the Language Materials Workshop and the Curriculum Development Thrust were completely different. The Curriculum Development Thrust had the character of a mass movement whereas the Language Materials Workshop was part of a research operation. The compromise was peaceful coexistence. An interim arrangement was made that anticipated the final outcome of the research operation.

The more serious challenge posed by the Curriculum Development Thrust to the Language Materials Workshop did not come as a result of the operational compromise but rather as a challenge of focus from the coordinator of the Curriculum Development Thrust.

In March 1974, the coordinator raised the following issues:

. The area of real need in primary education for language-arts materials was Grades 4-6. He claimed that the Ministry of Education itself had previously developed very good teachers' guides for Grades 1-3, that commercial publishers had developed suitable textbooks for Grades 1-3, and that the upper primary grades remained a desert of linguistically outdated and culturally alien materials.

. The materials produced should be interdisciplinary modules rather than comprehensive language units for the first grades of school. These modules should aim at developing in the children certain conceptual skills that were not being met in any individual discipline and that were desperately needed for society's survival in the modern world. Such modules would better fit into an integrated learning approach used in Grade 1 by the Curriculum Development Thrust.

. The full-time writer employed to develop Grades 1-3 materials should be directed to work on materials for Grades 4-6.

. The high cost of the production of materials, the duration of the workshop, and the source of the nonministry funding were questioned.

The project director of the Language Materials Workshop responded in the following way:

. The workshop was working on materials for both Grades 1 and 6 although its Grade 6 work had fallen behind.

. He questioned strongly the point that adequate materials existed for Grades 1-3, pointing to the fact that if the ministry had considered its own materials to be adequate it would not have commissioned the workshop to produce the curriculum for Grades 1-3 nor would there be any need for the Curriculum Development Thrust itself.

. He asked for an additional full-time writer to work on the Grade 6 materials.

. He pointed out that the workshop was working very closely with other subject areas, especially social studies, to develop an integrated approach to the curriculum in Grade 1.

The coordinator of the Curriculum Development Thrust was not able to take the matter any further for a number of different reasons:

. The Language Materials Workshop was commissioned by the Publications Branch of the ministry, therefore control of the workshop's operation was with that branch and not with the Curriculum Development Thrust, although the funding for the workshop came from the Curriculum Development Thrust.

. The Language Section of the Ministry of Education, which should be the natural arbiter in such a dispute, was defunct.

. The language subcommittee, consisting of ministry personnel and professionals in the field, which could also serve as the arbiter, was chaired by Wilson, Craig's colleague in the Language Materials Workshop.

. The coordinator's position was compromised because he was one of the authors who had been contacted by a commercial publisher to produce materials for Grades 1-3 and had done so.

. The funding provided by Ford gave the workshop an autonomous status although the funding for the Grades 1-3 curriculum and materials was provided by the Ministry of Education. Hence, Craig's position was maintained.

The Language Materials Workshop completed its work in producing the curriculum and the attendant materials in 1976. These were then turned over to the Ministry of Education for publication and dissemination (Wilson et al. 1978).

Publication of the Grades 1-3 materials set an important precedent for the publication of educational materials in Jamaica. Local authorship coincided with the trend to Jamaicanize the educational publishing industry. The Ministry of Education required that all the companies tendering to publish the materials should be Jamaican. The tender was won by Heinemann Educational Books Caribbean Limited in which 51% of the shares are held locally. In the production of the Grade 1 materials, except for the origination, all the work was done locally. For the production of the materials for Grades 2 and 3, all the work including the origination was done locally. Although the publication of these materials represents a milestone in publication in Jamaica, it has also suffered from the weaknesses evident in any infant industry. Members of the Language Materials Workshop, for example, expressed disappointment concerning the quality of the art work and the presentation of the materials from the point of view of attractiveness of layout and quality of the finished product.

The implementation of the materials into the school system was as follows. The Grade 1 materials were distributed to schools by June 1978 for teaching of this new curriculum and materials in all 800 primary schools in Jamaica to start in September 1978. Resource teachers were identified from different parts of the island and given special training. Thirty-five such teachers were employed, with the responsibility of providing help to 20-30 schools in a given geographical area. In addition, the ministry used its educational broadcasting service to assist teachers with the use of the new materials in schools. In 1979, following a similar pattern, the Grade 2 materials were introduced and, in 1980, those for Grade 3.

Analysis

This case study presents a wide variety of interesting points. Although recognizing the complicated set of intertwining factors that were operative, the following eight were more important than others.

Continuous Diffusion and Dissemination of Research Results

Starting with the Department of Education in the early 1960s, research findings focused on the problem indicated the inadequacy of the language-teaching strategies existing in the schools. The mechanisms that were used for the dissemination of these research results included conferences, the Jamaica English Teachers' Association, and seminars and workshops involving practitioners and researchers in the diploma, higher diploma, and master's courses in language education at the Department of Education at the university.

Four types of research results were disseminated: linguistic studies of the Jamaican Creole; studies of children's language as these described the language structure that the child brought to school at the start of his or her education; analytic studies of the language problems experienced in learning English in schools; and studies empirically assessing the validity of teaching strategies in schools and new models designed to overcome language problems that had been identified.

The dissemination of research results made three important contributions: It helped to maintain the climate requiring change in the language-teaching strategies and in the materials that were being used in schools; it created the rational/logical framework within which the existing strategies could be critically analyzed and assessed; and it provided both the theoretical and empirical foundations upon which new strategies could be created and defended.

Linkages between Researchers, Teachers, and Technical Officers of the Ministry of Education

Important linkages established between teachers, Ministry of Education technical officers, and researchers had a critical bearing on all the events outlined. These linkages were established through a number of networks, formal and informal, which emerged over time:

. Inclusion of teachers and Ministry of Education technical staff in the research projects that were carried out by university researchers;

. Enrollment of Ministry of Education personnel and teachers in the various courses offered by the Department of Education of the university and taught by the researchers;

. Formation of the Jamaica English Teachers' Association and involvement of the researchers in the work of that association;

. Inclusion by the Ministry of Education of the researchers and their associates in the various committees operated by the language-arts curriculum section and Publications Branch of the Ministry of Education; and

. Promotion of some of the officers associated with the research into key and influential positions in the ministry's hierarchy.

Consistency of a Local Researcher

The continuing commitment and consistent action of a local researcher, Craig, appeared to have been crucial. He was involved from the early 1960s until the materials were implemented in schools. For 14 years, he single-mindedly pursued the task of producing language materials and curriculum for primary-school children in the early grades. Sometimes he worked on his own, at other times with assistants, on another occasion in a team. He participated in ventures that failed in terms of their own peculiar and specific objectives. He participated in activities that had limited success, including his own experiment in teaching. He collaborated with all those persons he deemed to be important to the achievement of his objectives. He provided the continuing and continuous link although numerous other people made important and significant contributions to the entire exercise. Eventually, through a concatenation of circumstances that he himself had not anticipated, the goal was achieved. From one point of view, the integrity of the entire operation was preserved through the continuous effort of Craig.

Financial Support

Without the grants made by Esso Jamaica Limited, the Ministry of

Education, and the Ford Foundation in funding the various projects, the researcher's commendable consistency might well have been frustrated. The leading role in providing financial support came from the Ford Foundation. First, the foundation financed the Institute of Education and funded its outreach programs through which Craig initially become involved. Second, it financed the Caribbean educational publications project, which provided Craig with an apprenticeship in the development of language-arts materials. From this source, by deft juggling, he was able to organize his experiment for the development of a model for the teaching of standard English. Finally, the foundation funded the Mona Project and through it the Language Materials Workshop. Although Ford's grants were not consistent or continuous, they were sufficiently frequent to support Craig's consistent and continuing activities at critical points. It should be noted that, although the Esso grant and the several Ford grants supported basic and applied research, the Ministry of Education component in financing some of the work of the Language Materials Workshop was devoted solely to implementation research.

Political Mandate for Change

The newly elected government of 1955 implemented in 1957 its policy to integrate the primary and high-school systems through a Common Entrance Examination based on merit and the free-place system. The low achievement of primary-school children in learning standard English had been a persistent and perennial problem. After the introduction of the new policy, it became a matter of national concern. Teachers and language educators in the university began to examine the situation critically.

Although there was a change of government in 1962, there was no change in the common entrance or free-place policies or the introduction of any new curriculum policy, although this change in the political directorate coincided with the achievement of political independence.

In 1972, 10 years after independence, there was another change of government. The newly elected government placed priority on educational reform and made curriculum renewal at the primary level the flagship of that reform. As such, the language-arts curriculum and materials prescribed by university researchers were drawn into the mass movement created by the Curriculum Development Thrust. Although it appears that the new policy directions for language teaching suggested by the researchers would have been accepted by the ministry eventually, the overall mandate for change embodied in the Curriculum Development Thrust made its acceptance certain and immediate.

Timing

Timing appears to be a very important factor. Three important sets of circumstances overlapped.

. The university researchers, led by Craig, in the 9-year period 1964-73 developed solutions to the language-teaching problems, and successfully field tested them. They had, also through research, adequately described the language of the child at the point of entry to the formal school system at the age of 6 years.

. Research funding was in place in the form of the Ford grant for 6 years, 1969-75. This allowed for the creation of the Language Materials Workshop, which served as a mechanism through which language-teaching and linguistic-research findings could be translated into language curriculum and language materials.

- The political mandate of a new government demanded change and desired indigenously created solutions to the problems of teaching and learning standard English in Jamaican schools.

The decision to phase out the Island Readers Series and to replace it with locally produced books was part of the mood of the movement. The university researchers were ready with answers; research funding was in place; the policymakers desired new directions; all parties were in touch with each other. Together they exploited the opportunities of the moment fully.

Availability of a Production Capability

The Language Materials Workshop was an important production capability that was available at a critical time. It was the mechanism through which research defining a new model for teaching English in the Jamaican situation was translated into curriculum in language arts and appropriate materials to be used in the schools in support of this curriculum. This is not to say that if the workshop had not existed the translation of research into curriculum would not have taken place, but rather that its availability facilitated the process, ensured the equality, and made the task simpler.

The University Base of the Research

Craig's university base allowed him a number of important facilities: security of tenure, opportunity to tap resources external to the local system, and relative autonomy.

This autonomy allowed Craig to differ in his approach from that of his colleagues in the School of Education, adopting a research-oriented approach rather than a pragmatic one. It also allowed him to successfully defend the materials he was producing for Grades 1-3 against the opposition of the coordinator of the Curriculum Development Thrust.

The university base also facilitated the dissemination of research results and the establishment of networks that included people in the policymaking machinery of the Ministry of Education. It accorded the research and the researchers a certain status that proved to be important when competitive materials and alternative strategies were assessed. The university base of the research helped to establish its credentials beyond reasonable doubt.

From another point of view, it could be said that the university provided the leadership in the solution of a problem faced by policymakers and practitioners and it did this through research. The basis of the leadership was the ability to bring to bear upon the problem the knowledge and insight that were not forthcoming from any other source. In the first instance, the knowledge brought to bear on the problem was previous research. During the search for solutions, the university personnel, through research, generated knowledge at various stages to establish the parameters of the new solution and to test its efficacy in the field situation.

Summary

Although the list of critical factors is not exhaustive by any means, it includes those that were most operative in this case. There may be disagreement about the order of priority given to the different factors, but the set is sufficiently comprehensive and decisive to account for the outcome, although it may be difficult to pinpoint any one particular factor as being the decisive one.

It is interesting to note the sequence of the interplay between policy and research in this case.

. New education policies of a new government decreed in 1957 set a new relationship between primary and secondary education.

. The perennial problem of low achievement in language learning by lower-class Creole-speaking children in primary schools was highlighted and aggravated.

. This stimulated the diffusion and dissemination of research results relevant to this problem.

. This inspired the development of a new model of language teaching based on the existing linguistic-research findings and the empirical testing of this new model through applied research. It also inspired, through applied research, the description of the language that the child brings to school at age 6 or 7 on entry to primary school.

. As a result of the dissemination of research results, the research process itself, and teaching, informal networks establishing linkages among researchers, practicing teachers, and the technical staff of the Ministry of Education became a reality.

. Through these networks and linkages, researchers, policymakers, and practitioners were able to criticize convincingly the existing language-teaching practices, policies, and materials and were able to set the parameters for new policies, materials, and practices.

. In a new round of overall policy changes dictated by a new government in 1972, curriculum policies and materials prescribed by researchers were adopted and included in the new curriculum policies.

Thus, the interaction between research and policy in this case was cyclical and organic. The solution was not achieved in one giant step but through a number of stages, each stage catalyzing and leading to the emergence of the next.

LINGUISTICS RESEARCH AND LANGUAGE-ARTS CURRICULUM POLICY IN TRINIDAD

In 1968, Lawrence Carrington, Research Fellow of the Institute of Education, St Augustine, started a project entitled "Investigation of the English-language learning and teaching problems in Trinidad and Tobago" (see Carrington et al. 1972a, b; Carrington 1976).

Four assumptions were made for this project:

. That most children in Trinidad and Tobago used, as their normal means of communication, language, dialects, and forms of speech that were systematically different from internationally accepted English;

. That the teaching methods, teaching materials, textbooks, and teacher-training orientation were nor selected, designed, nor adapted to take into account the systematic differences between the student's normal means of communication and internationally accepted English, and were therefore irrelevant;

. That examinations and tests of knowledge of English competence, the methods, materials, textbooks, and teacher orientation were irrelevant or of limited relevance; and

. That the most effective materials and methods were those that were based on sound language-learning theory coupled with a scientific description of the language of the learner carefully compared with a parallel description of the language to be learned.

The objective of the research was to provide an unequivocal guideline for the development of classroom materials, methods of instruction, teacher training, and testing that were fully applicable to the linguistic context of Trinidad and Tobago. Initial funding for this project came from an enlightened use of the Carnegie Foundation funds provided for the project on school organization that allowed Carrington to acquire the equipment and materials necessary to initiate this project, which was essentially basic research.

Carrington was assisted in the field work and analysis of the first data gathered by two officers of the Ministry of Education who were assigned full-time to the project. In this way, the Ministry of Education gave meaningful support to the project. During 1969-70, proposals were put forward to include this project as part of the Ford Foundation's project in linguistic and language teaching in the Caribbean. This was accepted and, for 1971-73 and 1973-75, which cover the second and third grants by the Ford Foundation, this project was expanded and funded as the St Augustine project. The staffing for the project increased to five persons for 1971-74 but, during 1974-75, the ministry withdrew its assistance -- apparently because of a difference of opinion between the then Minister of Education and Carrington concerning statements made by Carrington about the state of education, language teaching, and learning in Trinidad and Tobago at the time. At the conclusion of the Ford grant in 1975-76, the project had progressed to the point where the transcription of the data was complete and the analytic procedures were at an advanced stage. However, at that point, the project was without the necessary computer program for analysis of the data. With the withdrawal of the ministry's support and the termination of the Ford grant, the progress of the project slowed considerably in 1976. The only person who continued to work on the project was Carrington.

In 1975, however, the Ministry of Education had enunciated new curriculum policies for schools in Trinidad and Tobago at both the primary and secondary levels. In the area of language arts, the ministry included in its curriculum policy the general principles and broad outline that were the theoretical underpinnings and assumptions of the language-arts project being carried out by Carrington. Both ministry officers who had worked with Carrington as research associates for 1969-74 were now the senior officers in curriculum and language arts in the Ministry of Education and the advice concerning the language-arts curriculum policy came mainly from these officers. They, therefore, played a critical role in the enunciation and formulation of the new policy. The new policy provided broad outlines and principles but not a detailed curriculum or supporting materials as in the case of Jamaica. This was principally because the language-arts project had not proceeded to the point at which detailed curriculum and materials were available.

Following the publication of this new policy in 1975, several articles appearing in the press and comments on radio programs were addressed to the new direction in language teaching and learning that was now being incorporated into the primary-school system. This brought about a healthy dialogue between the officers of the Ministry of Education in language arts, Carrington at the School of Education, and members of the public. This debate was documented in a publication that summarized the letters in the press, the comments on radio, and the comments and observations of the policymakers and researchers (Carrington and Borely 1977). At the end of this period of dialogue, there was much greater public acceptance for the point of view enunciated in the new policy directions. The research support provided by the Institute of Education had played an important part in convincing the public of the soundness of the new policy.

In 1977, Carrington received a grant from the Research and Publications Fund of the university. This offered clerical and research assistants to complete the transcription task and to prepare the data for computer analysis. It was not until 1979, with the help of a researcher in a polytechnic institute in England, that Carrington was able to get the necessary data-processing assistance to complete the task of analyzing the data. By then, he had achieved a full description of the morphology and syntax of Trinidadian Creole and Trinidadian children's language, especially the language brought to school by the child at 6 years old. At this point, the project was at a stage where it was possible to translate the research findings into detailed curriculum content and appropriate supporting materials.

Another significant development that has taken place over the last 3-4 years has been that postgraduate students from the Department of Linguistics of the Faculty of Arts and General Studies have been assigned to Carrington for supervision for master's and doctoral programs. One master's student has been working on teachers' language, i.e., the language model presented by teachers in the classroom. This is an analysis of the standard and Creole forms that appear in the language of Trinidadian teachers as it relates to rural/urban dichotomy, sex, and the pattern of training of the teachers. This bit of research is actually complementary to the children's language project and will have significant input into the educational programs devised for teacher training in the next stage. Another student is looking at the difference in communication strategies of children who speak Creole or standard English. The particular emphasis of this research is on patterns of intensification, focus, and subordination. The point to be noted here is that the project in children's language has attracted the interests of linguists and linguistics students from other sections of the university and has provided an opportunity for training of researchers in linguistics and language education within Trinidad and Tobago.

COMPARISON OF THE TWO CASES

These two cases of linguistic research that have affected language teaching and learning in Jamaica and Trinidad share a number of features but equally have differences.

Similarities

Both research projects were in response to concerns in language teaching and learning that were highlighted because of policy decisions of the two governments to integrate primary and secondary schooling by the introduction of the Common Entrance Examination and the free-place system. The concern for language teaching and learning at the primary level stemmed from the complaints of secondary-school teachers and of society at large, especially the middle class.

University-based research offered itself and was called upon to play leadership and problem-solving roles in addressing this issue.

Dissemination of existing research results created the climate and the logical framework within which existing practice and provision could be effectively and convincingly criticized.

Through the research that was mounted to seek solutions to the problems and, in the case of Jamaica, the teaching program of the university, networks were established involving researchers and the technical advisers to policymakers.

The projects, at various stages, attracted indirect and direct funding from international funding agencies and governments. Although the funding was not consistent or continuous, it was sufficient to support the projects at certain critical stages.

The continuing and consistent commitment of a local researcher ensured the integrity of the projects through their several phases and stages.

Both projects continued or are continuing for a long time. Between the start of research in the Jamaican project in 1964 and the implementation of language-arts materials in 1978, there was a passage of 14 years. The Trinidadian project has now been running for 13 years.

Contrasts

The Significance of Basic Research

One of the major differences between the two projects was the starting point relative to basic research. In Jamaica, Craig had the benefit of a full and competent description of the Jamaican Creole by linguists from the Arts Faculty of the university. Starting from this base, he made certain logical deductions with respect to the educational implications that followed from the differences and interference that existed between standard English and the Creole in the learning of language in Jamaican schools. He could, therefore, proceed immediately with applied research to determine the teaching model that would be effective in this linguistic context and the language that the child brought to school at age 6 or 7 years.

Carrington in Trinidad, on the other hand, had only a partial description of the Trinidadian Creole. It was in no way as comprehensive or as reliable as the description available to Craig in Jamaica. Carrington, therefore, had to carry out the basic research into the Trinidadian Creole to complete the linguistic analysis necessary before he could proceed to determine the language of children and the teaching strategy effective in the Trinidadian situation. Thus, effectively, Carrington had to spend a much longer time on initial action before he could begin to tackle the problem that was his main concern.

Sometimes the attempt is made to classify research into basic, applied, and implementation and to assume that they are different and separate activities. Basic research is seen as a luxury that cannot be afforded whereas applied and implementation research are considered more bread-and-butter activities that should receive immediate support. These two cases clearly demonstrate the interrelationship and the dependence of applied research on basic research. In addressing this kind of problem, it is impossible to proceed to applied research before the essential basic research has been done. This is an issue that funding agencies and governments, as well as universities and researchers, must face. Failure to understand the dynamic interrelationships between these different aspects of the research activity may in fact inhibit solutions.

Clearly, what is lost in the failure to recognize the need for or to do the basic research is time. If one hurries to the applied research without doing the basic research, time is not in fact gained, but lost.

Role of Basic Infrastructure

The absence of appropriate computer programs, software, and experienced programmers in Trinidad contributed significantly to the delays experienced by Carrington in analyzing his data. Although the hardware was present and the time was made available, the absence of an experienced programmer and the necessary programs frustrated the research process. This clearly demonstrates the importance to research of adequate infrastructure in the field of data processing.

This point is quite obvious and does not need elaboration but it is essential to point out that infrastructure is an important and necessary ingredient for research. Carrington lost as much as 2 years because of this factor.

Time and Timing

A number of observations related to time and timing are apparent from these two cases.

Research seems to have its own time or cycle: starting with basic research and moving to applied and then implementation research. There is a sequence that must be followed and that dictates a particular duration.

Policy seems to operate in cyclical ways and, in so doing, has its own time. In 1957, in Jamaica, there were sweeping policy changes that triggered various responses. The next turn of the policy cycle was 1972. It was necessary that the research that had been stimulated by the policy changes in 1957 should have reached a certain point in its own maturation so that it could be incorporated and implemented in the changes dictated by the 1972 policy directives. Resulting from these two turns of the policy cycle, research produced a solution that was implemented across the educational system in the hope of improving performance. In the case of Trinidad, similar responses were triggered by similar policy changes that took place in the late 1950s and early 1960s. Research started later in Trinidad than in Jamaica and it had to start from an earlier point in the cycle. Thus, when a new turn of the policy cycle took place in 1975, only broad policy directions, that is, a partial solution, could be introduced; the detailed, comprehensive curriculum with supporting materials is still to come. Thus, having missed this turn of the policy cycle in Trinidad, the comprehensive and full solution to the problem will have to wait the next turn of the cycle.

For research to inform policy, it must be ready with answers when policy requests such answers. Research must anticipate policy.

In both instances, the time taken to achieve the desired results was longer than might have been expected because funding given to these research efforts did not coincide with the research cycle. One could argue that it need not have taken 14 years to produce the desired result in Jamaica. It is unlikely, however, that the entire process of conceptualization of the problem starting from basic research to the solution could be achieved in the relatively short period of 4 years -- the longest period of funding by any agency. This certainly is another issue that needs to be addressed, especially in the interrelationships between funding agencies and researchers and research institutions. It would appear that part of the time that it took for the research to have effect was related to the time it took for the researcher to establish the efficacy of his approach. In other words, the researcher had to carry the risk of his approach until he was able to demonstrate that it had merit. At that point, funding began to be given. If there were methods and means of early identification of promising research and researchers, this might reduce the time taken for such research to have the desired effect and it might also improve the coincidence of the research cycle and the funding cycle.

MATHEMATICS CURRICULUM IN THE EASTERN CARIBBEAN

In each of the two cases described previously, university researchers tackled a problem and developed a solution that was later accepted and implemented by the respective Ministries of Education. Although this is one way in which university researchers and ministry policymakers in the Caribbean have interrelated, the more common type of interrelationship is one in which a Ministry of Education approaches a Faculty of Education and requests assistance with some problem. In such circumstances, the policy is not in doubt. Once the university researchers are able to produce a meaningful solution, there is the assurance that the solution will become policy and will be implemented in the school system. The development of mathematics curriculum in teachers' colleges and primary and secondary schools in the Windward and Leeward Islands is an example of this type of interrelationship.

In 1966, Ministries of Education in the Windward and Leeward Islands approached the Institute of Education of the University of the West Indies concerning the poor performance in mathematics of students at the primary and secondary levels in their territories. They sought some help from the Institute with this problem. Broomes, who had joined the Institute in 1965, was assigned by the Institute to conduct a survey on mathematics performance in schools in the Windward and Leeward Islands. Following this survey, Broomes undertook the task of curriculum development and started with curriculum for teachers' colleges. At a mathematics study conference held in St Lucia in December 1966, representatives from the five teachers' colleges in those territories began working on mathematics curriculum manuals for teachers' colleges. These manuals were published in June 1967. The curriculum described and recommended in these manuals was adopted by the five teachers' colleges in the Windward and Leeward Islands. Following the task of establishing a mathematics curriculum for teachers' colleges, Broomes turned to the development of mathematics curriculum for primary and secondary schools. Initiatives in this direction were launched in St Lucia, St Vincent, and Antigua. The Government of St Lucia gave enthusiastic and dynamic support to the project that eventually became known as "The St Lucia mathematics project." The collaborators in this project were the Institute of Education in Barbados, the St Lucian Ministry of Education, and the St Lucian Teachers' College. The area of emphasis was the development of mathematics curriculum and materials for the infant and primary levels.

The essence of the strategy employed was:

. To use personnel from the Ministry of Education and the teachers' colleges to write mathematics material for use in schools;

. To test these materials, first in a set of pilot schools and then in the entire school system in St Lucia and thus arrive at a form of mathematics congenial to the mode of learning of the children and easy for teachers tc handle; and

. To generate through a series of activities that included study groups, reading facilities, writing sessions, orientation courses, construction of aids, publication, and supervisory help, a cadre of knowledgeable and skilled persons to produce a variety of curriculum materials in mathematics such as tests, pupils' books, teachers' manuals, workbooks, and program materials.

The teachers' colleges played a leading role in that tutors of the colleges served as mathematics supervisors, prepared curriculum materials, and experimented in pilot schools; helped to conduct workshops and other training activities; and used materials produced by the project in their teaching program at the colleges.

The Ministry of Education appointed two mathematics supervisors whose main function was to direct the improvement of mathematics teaching in the schools. The ministry also undertook the responsibility of producing workbooks and manuals for teachers as well as the various tests that went along with the programs.

The materials produced were comprehensively tested in the schools. As a result of this testing program, numerous revisions were made, followed by more field testing. In addition, several in-service training programs were organized for all the teachers in the schools to ensure the appropriate use of the materials as well as an appropriate understanding of the new strategies. Various in-service workshops were followed up by assistance given to the teachers on a one-to-one basis by the supervisors from the teachers' colleges and the Ministry of Education.

Although the project was developed in St Lucia, all the other territories of the Windward and Leeward Islands agreed to accept the syllabus, curriculum, and materials that had been produced in St Lucia. Although minor modifications were made to the materials to make them acceptable in each territory, all the territories in the Windward and Leeward Islands were using the same mathematics curriculum and materials at the infant and primary levels. By 1972, students' textbooks and workbooks, teachers' manuals, and tests were produced and distributed for use in all the territories and the new curriculum had been implemented successfully.

Several points from this case bear similarities to those raised for the cases quoted previously.

. There was the consistent and continuous effort of a single researcher working over the 6-year duration of the project. This was an important factor in determining the success of this project. In 1966, when the Ministries of Education approached the Institute of Education, their curriculum concerns were not solely related to mathematics but also included English language and science. Similar projects were launched in these two subject areas at the same time as the mathematics project. However, because of frequent staff changes, and delays in replacing the staff, the projects in these two areas became defunct.

. The university base of the research added status and prestige to the exercise and helped to facilitate the programs that were developed.

. In the formulation of the curriculum and the production of new materials, linkages were established and networks formed between the technical staff of the Ministries of Education, teachers'-college tutors, university researchers, and teachers in the field. These linkages were important in the acceptance of the new curriculum and materials by the teachers in the schools in the various territories.

. The funding and financial support for this project came, mainly, from the Government of St Lucia and secondarily from the Institute of Education in Barbados. Thus, it was a purely local effort with no financing from any international agency and funding was assured for the entire duration of the project.

. Although the policy parameters were established from the beginning of the project, and funding was assured for the entire life of the project, it took 6 years to achieve the desired goal. It should also be noted that the approach to this project was to a large extent a priori. Although, at the beginning, there was a survey to determine the level of achievement in schools and the kinds of weaknesses that existed in the performance of children, basic research issues were largely ignored. The strategy employed was that of applied research. The best information and knowledge available at that time was used to improve the mathematics performance. The point being made is that even with all of these assumptions and favourable conditions, it took longer to produce the results than most international agencies would fund this type of project.

THE PROJECT FOR EARLY-CHILDHOOD EDUCATION IN JAMAICA

I have already referred to the establishment of the common entrance and free-place system in Jamaica in 1957. Early in the 1960s, Vernon (1961) established that most of the 2000 free-place awards were going to children from preparatory schools who, predominantly, had middle-class backgrounds. In other words, the intention of government to ensure that children from poor backgrounds were able to enter secondary schools through a free-place system was not being achieved because children from lower-class backgrounds were not competing successfully with their middle-class peers. One of the contributory factors was that many children from rural and urban lower-class backgrounds entered school at age 7, having never been to school before. There was a strong recommendation that the age of entry to primary school should be lowered to age 6 and that every effort should be made to develop early-childhood education for children from lower-class backgrounds.

In late 1964, the newly formed Jamaica Teachers' Association, supported by sections of the private sector, including the Manufacturers' Association and the Chamber of Commerce, launched a special effort to promote early-childhood education. This effort involved encouraging churches, service clubs, charitable organizations, and philanthropic individuals to sponsor schools that catered for urban and rural poor children between the ages of 4 and 6 years.

Traditionally, lower-class working mothers in both urban and rural areas left their infants in the care of a kind and sympathetic woman who, for a small fee, looked after them during a significant portion of each work day. In many instances, these women organized their child-minding operation as a school -- a basic school -- and styled themselves as teachers imparting nursery rhymes and songs as the main elements of education.

In 1966, the Bernard Van Leer Foundation, in collaboration with the Institute of Education at Mona, and with the permission of the Ministry of Education, launched an early-childhood education project in two parishes, St Thomas and Portland. This project was designed to improve the quality of these indigenous institutions (Grant 1967).

A basic school in Jamaica is currently defined as a school catering for children between the ages of 4 and 7 and owned and operated by a private individual, a church, or a private voluntary organization. It caters to children from the lower socioeconomic groups, such as the working class in urban areas and peasants and agricultural labourers in rural areas. Although government is not directly involved in financing and governing these schools, there is a system whereby schools that operate at a particular standard and so satisfy certain criteria laid down by government are given financial assistance. Most of these schools are one-teacher operations although there are some schools with two, three, and a maximum of four teachers. They charge very low fees, for example, 25 cents/child per week, and generally have about 60 children. The median indoor space available in these schools is about 6 square feet/pupil.

The teachers are almost always women with a low level of education, the modal level of education being Grade 6 of the primary school, that is, they successfully completed primary schooling but have no education beyond this level. Most have 1 or 2 years teaching experience, which indicates that teaching at the basic school level is a kind of stop-gap measure. The teachers themselves are members of the same socioeconomic group as the parents of the children.

The Van Leer Project accepted this grass-roots organization called the basic school, its location, its teachers, and the relationships that existed with parents and community. The concept was to work with it to see if an acceptable quality of education could be built into this institutional framework, principally by improving the competence of the teacher, supporting her with curriculum, content, and materials.

The aims of the project were to improve the quality of teachers in early-childhood education through in-service training, to develop more appropriate methods and content for education for early childhood, to develop, experimentally, instructural materials for use in the program, and to identify and train personnel.

Accordingly, its efforts were directed to the following four broad areas: teachers; children; curriculum content, methods, and materials; and community.

. For the teacher, the emphasis was on changing the teaching techniques, promoting her self-image, altering her expectations, and building a reference system common to her and her help agents, the project staff, and the Peace Corps volunteers.

. For the children, special attention was paid to their life-style, their experience, and their cognitive and affective developmental needs.

. The curriculum content, methods, and materials were to provide for growth-centred teaching/learning activities that compensate for the experiential gaps of the pupil and maintain a balance between remedial experiences and developmental tasks.

. Within the community, particular efforts were to be made to involve parents, sponsoring bodies of basic schools, and voluntary and social organizations in the improvement and the expansion of basic-school facilities.

From 1966 until 1972, the project had a staff consisting of a project director, D.R.B. Grant, curriculum consultants and supervisors, researchers, and curriculum development and materials specialists, with Peace Corps volunteers acting as field supervisors. It began with the establishment of base-line data through a study designated "Profile of basic schools in four eastern parishes of Jamaica." This study provided information establishing profiles of the schools, teachers, pupils, communities, and teaching/learning conditions existing in nearly 500 schools in these parishes.

A three-part strategy was adopted.

First, in the summer of 1966, residential workshops of 2 and 4 weeks duration were held for the teachers. During these workshops, the teachers were instructed in child psychology, the project's approach to early-childhood education (emphasizing less authoritarian and more child-centred approaches), school organizations, teaching methods, community relations, and the construction of teaching aids.

Second, following these summer residential workshops, which involved 573 teachers, Friday workshops were held every 2 weeks in which the teachers were given curriculum guides covering the work to be done in the basic schools over the next 2 weeks. This curriculum was discussed with the teachers and there were demonstration lessons covering different aspects of the work to be done. The teachers then became engaged in the construction of aids appropriate to the curriculum content that was distributed and discussed.

Third, weekly school visits by the project staff and the Peace Corps volunteers followed the 1-day workshop. During these visits, there were:

. Discussions with the teachers concerning their understanding of the work they were doing, the difficulties being experienced, and the successes they had had;

. Demonstration lessons where this was deemed to be necessary;

. Work with the parents in the area helping the teacher to develop a parent-teacher organization supporting the school; and

. Work with the community organizations sponsoring or supporting the school to mobilize greater support for the basic school.

Every attempt was made to visit a school once between the 2-week workshops.

The Place of Research in the Project

The orientation of the project was not to create new knowledge or to develop new instruments of measuring phenomena. Rather, it was to use the best available knowledge at that particular time and instruments that were available and deemed to be appropriate to the situation to bring about significant improvement in the level of operation and in the level of achievement and development of students and teachers in basic schools. Accordingly, research was used as a supportive element to the project and not as its major orientation. The project was an extremely pragmatic one and research was employed in a very utilitarian fashion. It consisted of a description of base-line data concerning all facets of the operation of basic schools.

Therefore, surveys of various types were carried out in which every effort was made to describe the situation as accurately and as insightfully as possible. Armed with this information, the project staff then constructed solutions that were workable within the resources and the context of the situation. The project staff would then proceed to implement these solutions. The contribution expected of research at that stage was to provide formative evaluation to determine the effectiveness of the strategy that had been developed. For example, based on the initial surveys, it was decided that it was important to bring about two sets of changes in the teachers: a change of attitudes, and an improvement of their knowledge of child development and teaching methodology appropriate to this level of education. The staff then implemented strategies to bring about these desired changes and the researchers developed an attitude inventory and an information test that were applied to the teachers at the end of the period in which the programs administered to bring about these changes were implemented. Based on the data produced by these tests, the staff made appropriate responses. Another desired change was to bring about a less-authoritarian atmosphere and a more child-centred, play-oriented approach in the schools. Again, the curriculum and early-childhood specialists devised methods of bringing about these changes and the researchers developed a classroom observational schedule to obtain data that were used by the specialist to make appropriate changes in the training program.

In the final analysis, research was used to provide summative evaluation to see if the goals and objectives of the project had been achieved. This was done principally in two ways:

. Comparing the levels of achievement of the students, the attitudes and knowledge of the teachers, and the classroom practices before the start of the treatment and at the end of the treatment; and

. Comparing project schools with nonproject schools.

The findings from the research were that:

. Appropriate and significant attitudinal changes were brought about in the teachers;

. The teachers' knowledge of child development and of teaching methods appropriate to the early-childhood level was increased significantly;

. Significant changes occurred in the classroom practices of these teachers with the greater use of play, songs, and child-centred approaches and less use of harsh punishment; and

- Students in the project schools made significant gains over the period of the project. They made greater gains than their peers in nonproject schools and their peers who were in no school at all. The difference with middle-class peers remained the same between the ages of 4 and 5 whereas for children in the nonproject school or those who were not in any school, the gap with their middle-class peers widened. Probably the most important result that was demonstrated by the research was that it was possible to train these poorly educated, lower-class women to be effective teachers at the early-childhood level. This was a major question at the beginning of the research and a great source of scepticism among educators. What this project did was to dispel that scepticism and establish beyond reasonable doubt that such persons could be trained to become effective teachers at this level.

By 1969, the efficacy of the strategy being adopted by the early-childhood education project had been demonstrated. Several studies had been conducted by the research staff and the results published by the Bernard Van Leer Foundation, Project for Early-Childhood Education (they are available from the Centre for Early-Childhood Education, University of the West Indies, Mona, Jamaica):

- Profile of basic schools in four eastern parishes of Jamaica
- Lunch program practices in basic schools
- Teacher learning activities in basic schools
- Professional knowledge and practices of basic-school teachers
- Teachers' and parents' views of objectives of basic schools
- Achievement status of project and nonproject 4- and 5-year-olds
- Test and retest reliability study

Through the dissemination of these studies in the university and the Ministry of Education and by the visits of officials and practitioners to the project schools, there was an increasing awareness of the success the project was achieving in terms of its objectives.

Grant had always had excellent connections with the Ministry of Education and through these links, high ranking and influential officers of the ministry were briefed concerning the project and made aware of its success. Plans were made for the concepts used by the project to be extended into a national program. Following the change of government in 1972 and with the new mandate for change, the Ministry of Education adopted the strategies and programs of the Project for Early-Childhood Education and implemented its strategies in a national program in Jamaica. Following the success of the project in Jamaica and with the backing of the Bernard Van Leer Foundation, similar projects were mounted in other Eastern Caribbean territories, beginning with Dominica. Since then, the strategies of this project have been adopted as policy by many Caribbean governments. In all of these instances, the project has been able to achieve improved standards in education being offered by grass-roots institutions.

One interesting point is that Grant developed his strategy in 1964 while working with primary schools in St Thomas. It is interesting to note also that Grant and Craig began to work on language-arts problems in primary schools in St Thomas in the same project. Craig attacked the problem through the linguistic analysis of children's language and the construction of a model of teaching consistent with the linguistic context of the local situation. Grant, on the other hand, focused on the fact that most teachers were untrained, inexperienced, and poorly equipped to tackle the job of teaching. He focused his efforts on pragmatic ways in which to improve performance through in-service training of teachers. The researchers' differences of approach led to a fundamental conflict and, in the end, the director of the Institute concluded that they could not continue to work together. Consequently, Craig was given a new location in St Catherine to pursue research along the lines consistent with his approach and Grant was left to continue his work in St Thomas. In 1966, Grant was assigned the task of spearheading the work at the early-childhood level instead of continuing the work with the early grades in primary schools. He carried the approach he had developed in the primary program to the early-childhood project. Both approaches have yielded highly significant results with respect to different elements of practice; both have had the ultimate effect of improving the performance of students yet they could not coexist within the same project.

This raises some interesting questions about the way in which research is perceived. The fundamental question raised by Craig and supported by other university academics was that Grant was not really doing research. Craig was defining research in classic terms as discipline-oriented, scientific investigation designed to yield new knowledge about a particular phenomenon. Under this definition, Grant's pragmatic, action-oriented intervention strategy, working within the context of grass-roots institutions, did not qualify as research. Traditionally, the university has prized, espoused, and promulgated the former and looked upon the latter with a certain amount of suspicion. However, both approaches -- the utilitarian action-oriented interventionalist use of research and the discipline-oriented, knowledge-generating, classic scientific investigation -- are equally valid. They are, in fact, complementary.

The curriculum and supporting materials developed by Craig and colleagues have been implemented in the school system without much attention being given to the training of teachers in the use of these materials or to their orientation to its new approach. It would appear that the new language-arts program would be well served if it employed a strategy with the teachers similar to that pioneered by Grant.

Similarly, the early-childhood materials developed by Grant through the Project for Early-Childhood Education could benefit from a revision in which the principles, insights, and knowledge generated by Craig were incorporated.

The case of the Project for Early-Childhood Education emphasizes the importance of factors already identified in the previous cases:

. There must be continuous, committed, and consistent effort of a local researcher;

. Linkages should be in place or developed between university researchers, Ministry of Education technical advisers, and practitioners in the field;

. The timing has to be right -- by 1972, the strategies had been developed, tested, and proven successful and, therefore, were at a stage where they could be incorporated into a national program as demanded by the policymakers;

. It took 6 years to develop and test the strategy; and

. The project had status because of its university base and its international source of funding.

THE CHANGE OF THE 70:30 SYSTEM IN JAMAICA

The cases so far cited have examined the policy impact of research projects. This case examines the movement of a researcher into a policy-making position and his impact on a policy related to one of his areas of research.

The government that came to power in 1962 in Jamaica decided to implement a policy that was more egalitarian than previously and was deliberately in favour of children from the poorer classes. The reason was that the free-place system was intended to ensure that students whose parents were unable to pay high-school fees could attend high schools; however, most of the places were going to children whose parents were already paying fees in preparatory schools (Vernon 1961). The new policy proportioned the free places to high schools: 70% of the awards, or 1400 places, went to primary-school children and 30%, or 600, went to preparatory-school children.

Because high schools could, at that time, accommodate about 4500 students, the following system of awarding places to high school was used:

. The 2000 free places were awarded on a 70:30 basis in favour of primary schools;

. A further 2000 grant places were also awarded through the Common Entrance Examination on the basis of merit with the government paying the economic costs and the parents the fees charged by the schools; and

. The remaining 500 places were open to full-fee-paying students whose parents paid the full cost of schooling, that is, economic costs plus the fees charged by the schools. However, because of economic reasons, many poor children who had obtained grant places were not able to take up those places and the number of full-fee-paying students in any 1 year was greater than 500.

With the introduction of the 70:30 system in 1965, there was an outcry, especially by the middle classes, that the system was unfair because students who merited places were not awarded them and inferior students were being given full support by government. The principals and teachers in the high schools, by and large, supported the position of the middle classes.

In the late 1960s, the socioeconomic background of students in secondary schools, the impact of the Common-Entrance and free-place systems introduced in 1957, and the impact of the 70:30 system were investigated (Miller 1971).

Only about 10% of the students in high schools were from lower socioeconomic backgrounds: all the others came from homes that could afford to pay the fees of the high schools. Parents and teachers had found a number of ingenious ways of circumventing the 70:30 awards:

. Parents would enroll their children in the primary school but have the children attend preparatory school. The children would then enter the Common Entrance Examination from the primary school.

. Parents would send the children to the preparatory school for 5 years but, in the sixth year, the year of the examination, they would enroll them in a primary school with the children continuing to have extra lessons at the preparatory school.

. Although free-place students were assigned to a particular school, grant-place students were not. Principals would screen children who had received grant places and their parents and then refuse to admit them into the particular school. As a result, in frustration, parents would sometimes not bother with trying to send their children to high school and the principals would then fill the remaining spaces in their schools with full-fee-paying students, who were children of the middle class.

Although the policy was being circumvented in every way possible, the general impression of the public, which did not fully understand the 70:30 system, was that 70% of children entering high schools were from primary schools. It was never fully understood that only 1400 of the 4500 places in high schools were reserved for children from primary schools. The rhetoric used by politicians on both sides -- both those who agreed to the policy and those who criticized it -- contributed to the misunderstanding. The politicians claimed much more for the 70:30 policy than it actually delivered. In many instances, there were high schools in which more than 70% of the students came from preparatory schools (Miller 1971). The general public's impression was that this policy was championing the cause of the poor and ensuring that children from the poorer classes had access to high-school education.

After assuming power in 1972, the new government announced that free high-school education would start in September 1973. This announcement came as part of a wider package of educational reforms. With high-school education becoming free, the distinction between free-place, grant-place, and full-fee-paying would disappear. This raised the question of the basis on which entry to high school should be determined. If the Common Entrance Examinations were to continue as the basis of selection for high school, despite the new policy, would the places be awarded on the basis of the 70:30 system or on merit alone?

This was a highly sensitive issue because the new government claimed to be an even greater champion of the poor and dispossessed than the previous government. It did not want to appear, therefore, that it was implementing any policy that would be seen to offer less of an opportunity to the children of the poor than the previous government. At the same time, it recognized the inconsistency of claiming egalitarianism in education when selection to high school discriminated against a particular group of children.

The Minister of Education sought the advice of the researcher, Miller, who made six points in arriving at his conclusion.

First, the impression that the 70:30 system meant that 70% of the children entering high school came from primary schools was false and could be so proven.

Second, the 70:30 system had only ensured that 1400 of the 4500 places went to primary-school children because the 70:30 award only applied to the 2000 free places.

Third, any system that increased the number of children selected by the ministry from 2000 to 4500 would work in favour of the primary-school children because, of the 40,000 children sitting the examinations, about 36,000 were from primary schools and 4000 from preparatory schools. In addition, in the selection of grant and full-fee-paying students, school principals had favoured middle-class children.

Fourth, because the preparatory schools were located in the urban areas, any system that took account of the geographic distribution of school places in the various rural parishes would also work in favour of primary-school children.

Fifth, to include the 70:30 system in the free-education policy would be discriminating against preparatory-school children. Given the past action of middle-class parents, one possible consequence would be the growth and expansion of private high schools. This would undermine the government-supported high schools and make the educational system even more elitist.

Sixth, there had been significant improvement in the performance of primary-school children in the Common Entrance Examination over the 10-year period.

He concluded that the 70:30 system should be abolished and that the principle of selecting the best students, regardless of class and school background, for the places available in high schools was the soundest principle on which to base the free-education policy for secondary education.

Although the minister accepted the logic of this argument and the facts supporting it, he thought the situation too risky and sensitive to implement the advice given. It is not known on what basis the awards for 1973 were made. Certainly, no public announcements were made. The matter was treated in the strictest confidence by the minister and the committee making the awards.

By April 1974, a new Minister of Education had been appointed and Miller was recruited as Permanent Secretary in the ministry. In this position, he controlled the administrative and financial management of the ministry and was the chief adviser to the minister. Instructions had to be given about the principles for awarding the high-school places for September 1974. Miller advised the new minister in the same way he had advised the previous one and went further to take full responsibility for any repercussions if his advice did not prove correct. He accepted that, if the committee was instructed to proceed to award places on straight merit and if the proportion of places that went to primary schools fell below 60%, then a new policy would have to be developed to favour primary-school children. This would cause a delay in the publication of the results because the committee would have to make the awards based on that new policy.

Miller recognized fully that, in giving this advice, he was risking his career and possibly dismissal from the post of Permanent Secretary. The new minister agreed to this proposal and the following system was implemented:

. Students ranked 1 to 3000 in the examinations would be accorded places in high schools regardless of their geographical location or school background.

. After the award of the first 3000 places, the remaining 1500 places would be awarded according to the number of school places still to be filled in each parish. That is to say, if 500 places were available in Kingston and 100 in St Thomas and, at the end of the award of the first 3000 places, Kingston had filled 450 with 50 remaining and St Thomas had filled 30 with 70 remaining, then the remaining 50 places in Kingston would be filled by children from Kingston and the remaining 70 places in St Thomas would be filled by children from St Thomas. In both instances, the awards would be based on merit.

Essentially, the new policy was that the merit principle applied without qualification to the first 3000 places and applied conditionally, based on parish location, to the remaining 1500 places.

At the end of the exercise by the awards committee, 72% of the places went to primary-school children and 28% to preparatory-school children. The political directorate was extremely happy with this outcome. It was thought to be so important and significant that it was reserved for the Prime Minister to announce it in the House during his budget speech (Manley 1974).

> This year we had our first Common Entrance Examination on the new system of free education.... Last year when we were still on the old system ... 2000 children won free places, 2200 had to pay school fees, and 550 could only get in by paying the full economic costs of the school.
>
> This year we had for the first time in history in Jamaica entry into the secondary schools on a basis of pure merit, a merit system which meant that those who had the application, who worked that little bit harder, who had that ability regardless of their wealth, regardless of the ability of their parents, those were the ones that got the places to the tune of 4504 places. The 4504 children were chosen on absolutely pure merit, without regard to financial circumstances....
>
> I might be asked what happened to the 70:30 system.... Where before there was a principle, perfectly proper, of having, all-told 70 percent of the places for primary-school children ... when the children sat this year for the first time on a pure-merit system ... the children of the primary schools of Jamaica in straight competitive examination won ... 72 percent of the places on their own. So they in fact by straight competition got 2 percent more than what they used to be protected to get....
>
> We are very proud. That leads me, Sir, to the next point.... I am pleased to say that next year ... because we have free education and because the school-building programme will be coming on stream next year, by free competitive entry there will be 6000 children going to the secondary schools of Jamaica.

The essence of this case is that research had been done that yielded findings to provide an adequate basis on which policy related to high-school selection within the context of a free education system could be determined. Because of the desire of the new government to show that it was even a greater champion of the cause of the underprivileged classes than the previous government and a false understanding, by both politicians and public, of the existing policy, the issue became an extremely sensitive one. Although the policymaker accepted the validity of the research findings and the logic proceeding from them, he was unwilling to accept the perceived risk of implementing a policy based on these findings. The new policy based on the research findings was implemented because, by accident, the researcher had shifted to a policymaking position from which he could accept the risk of implementing the recommended policy.

Observations

It is quite possible that research findings that could inform policy are available but are ignored. This could happen even when the findings and the logic emanating from them are brought to the attention of the policymakers and specific advice is given on the basis of the research. The policymakers could even accept the validity of the findings, the soundness of the inferences made, and the logic of the recommendations based on these findings and inferences. The fact that the research results are not used could have nothing to do with the quality of the research or the competence of the researcher but rather with some nonrational factors within the political arena: in this particular case, it was the perceived risk of losing some "political points." This is, however, only one type of nonrational factor that operates in the political arena. There are many other possibilities. The present understanding of how these factors operate is now sufficiently comprehensive to yield general rules or guidelines for circumventing them.

A very direct way in which research can influence policy is through researchers who move into policymaking positions. This immediately focuses on the fact that research and policymaking are interchangeable roles that the same individual can perform at different times in a career. Since the establishment of universities in the Caribbean and the institutionalization of educational research, there has been a certain amount of two-way traffic between the university academic community and the ministry policymaking apparatus. Several senior ministry policy advisers have moved into the university research machinery and an increasing number of university researchers have been recruited into policy-advisory or policymaking positions. Such movements have been unplanned and pursued on an individual basis and have provided for the persons concerned both opportunities and difficulties. Hopefully, both research and policy can benefit from such interchange.

Where researchers recruited into the policymaking apparatus can make or influence policy based on the insights, information, and inferences obtained through research, an optimum situation exists. In such situations, consciously or not, the policymaking machinery is making effective use of knowledge generated by the local research establishment. At the completely opposite end of the spectrum is the situation in which researchers recruited into policymaking are unable to make or influence policy based on their research insights because of nonrational constraints operating in the policymaking apparatus. This is more likely where a researcher is in a policy-advisory position, is not sufficiently knowledgeable about the operation of the policymaking machinery, is inexperienced concerning the operational limitations within the system, and is not versatile or adept at manipulating the levels of influence available. In advising policymakers, one always finds competing alternatives originating from different sources. The recruited researcher is only one source and although his or her knowledge and interest are usually respected, his perspicacity is sometimes suspected. This makes him vulnerable, especially to the "old pros" of the policymaking apparatus. This situation is potentially frustrating when the researcher knows what should be done, suggests the solution, but finds his alternative is ignored.

Researchers recruited into policymaking positions must, of necessity, deal with the question of why they were so recruited. There are a number of possibilities:

. Research generates knowledge that usually increases the authority and power of the researcher in the particular context. This can be perceived by the policymaking apparatus as potentially threatening in that the researcher may become an adversary using knowledge, power, and authority in conflict and confrontation. To avert this possibility, the researcher is coopted into the policy arena thus compromising and neutralizing his "adversary potential."

. Researchers whose works win recognition usually acquire, in addition to intellectual authority, personal credibility within the local community. Policymakers are always seeking to convince and assure the constituents that the policies being pursued are sound, rational, and appropriate. One means of securing the confidence of the public is to have creditable authorities, in this case the researcher, associated with the policymaking process.

. The policymaking machinery is usually in need of technical expertise and more often than not seeks to recruit such expertise, especially where the political orientation of the expert is perceived as not being opposed to its ideological stance. Research is a potential source of such expertise. Within such a framework, the researcher is given an opportunity to translate research insights constructively into operational strategies that hopefully will determine educational outcomes.

At some stage, the researcher must come to terms with this issue. He or she may have been recruited for one or more reasons, which are discovered in practice and not through rhetoric. He must also face the reasons why he chose to join the policymaking machinery because within his own motivations may be aspirations other than contributing knowledge and skills to the advancement of educational policy and practice. The way that the researcher operates and his influence within the policymaking apparatus may ultimately be determined by the interaction of these two sets of factors.

COMMENT

The cases cited and analyzed here represent a combination of instances in which researchers responded to problems of concern to the educational community, worked out solutions, and then offered these solutions to policymakers and cases where policymakers invited researchers to help in the formulation of new policies. There are differences between research and policymaking inherent in the very essence of these two processes. Several general observations can be made from these cases and could be regarded as hypotheses to be tested in other situations to determine the extent of their validity.

. Policy has a crisis character that virtually dictates pragmatism whereas research has an idealistic and futuristic orientation.

. Policy tends to be universal and all embracing. It requires actions that apply to all schools, whereas research works with a sample of the population. For example, the Curriculum Development Thrust works with all 800 primary schools in Jamaica, whereas the Language Materials Workshop worked with 35 schools at the start and eventually with only nine.

. Policy requires urgent, immediate, and instant responses: the demand for action is now and there is great impatience. On the other hand, research is slow. It tolerates present inconsistencies and inconveniences with the hope that these will be solved and resolved in the future. It makes a trade-off between present difficulties and future solutions.

. Policy proceeds with little reflection or evaluation. Critical assessment tends to bring the policy into question and quenches its enthusiasm. On the other hand, research checks and rechecks itself: critical evaluation is its life blood.

. Policy is sensitive to public opinion. It thrives on consensus and conventional wisdom. Research is insensitive to public opinion and usually challenges conventional wisdom and commonsense solutions.

In looking at the interplay between research and policy in the cases cited, it would appear that research must anticipate policy if it is to be ready with answers when, for various reasons, the time for implementing a specific policy is right. I am not arguing that, in all cases, research must precede policy, but it would appear that problems in cognitive processes, fundamental differences between the culture of school and home, and the impact of previous policy fit this prescription.

Research and Practice

It is necessary to make a small but important point about research and its interaction with practitioners in the conduct of research. Usually, within Caribbean countries, it is enhancing and complimentary for an institution and its teachers to be part of an experiment or pilot study being conducted by university researchers, even though certain inconveniences may be experienced. A concern that the researchers must consider is what happens to the institution and the teachers after the research is completed.

For example, in the language-teaching research project in Jamaica, Craig tested his new model of language teaching in five St Catherine's primary schools. An essential part of the experimental treatment was the use of materials produced by the Caribbean education publications project. The teachers, through seminars with Craig, learned to instruct children using the new model with the Caribbean education publications project materials. Their students' language achievement improved significantly with these new materials and model. After the experiment was conducted and the Caribbean education publications project folded, the teachers wished to continue to operate in the new ways given to them by participation in the experiment; however, they could not because the materials were no longer available.

The experiment was successful and the efficacy of the model and the materials was proven, but the teachers in the five schools involved ended up frustrated because of lack of continued support in terms of a continuing supply of the materials. Through force of terms of a continuing supply of the materials. Through force of circumstances, they had to revert to the old materials and methods and it took another 10 years before materials consistent with the new model became available to the schools. Although it was by no means intentional or planned by the researcher and was beyond his control, the teachers were shown a garden of possibilities and then the gate was closed on them.

This is a part of a more general problem relating to researchers and practitioners. What benefit is to be derived by the practitioner in participating in and facilitating research? In many instances, they do not even see a copy of the research report. The researcher has to take responsibility to ensure that, in the pursuit of knowledge and truth, he protects the interests of both the subjects and those persons who provide assistance.

Research Outcomes

The cases described have demonstrated that research has influenced policy and practice in the Caribbean, but has it made any difference to educational outcomes? Has the standard of language achievement improved in Jamaica and Trinidad? Has the standard of mathematics performance improved to any significant degree in Barbados and the Windward and Leeward Islands? What difference has early-childhood education made to the educational opportunities available to poor children in Jamaica and Dominica? Have high schools been preserved as broader institutions in Jamaica and are more lower-class children entering them because of the new selection policy? There are no empirical studies that answer any of these questions.

To date, there has been the implicit assumption that the new research-based policies and practices that have been implemented have had the desired effects. This has not been verified, however, because these new policies and practices have not been evaluated. It is well known that a certain effect demonstrated with a tightly controlled and adequately supported pilot situation can be lost within the framework of a national situation in which elements are loosely controlled and support services are inadequate. It could very well be that the research-based policies and practices have had the desired effects; however, these have not been quantified and, in the absence of any empirical assessment, one can only speculate.

The situation demonstrates a weakness of the Caribbean educational systems -- a lack of continuity of effort and follow-up in programs. Many activities are pursued in fits and starts and are apt to make assumptions of success or to ignore what has gone before. A real danger is that new programs, policies, and practices may be implemented in the near future without any thought being given to what has or has not been accomplished by existing policies.

The relationship between research and policy in the Caribbean is so haphazard and unsystematic that, even where it is possible to establish a positive impact of research on policy, it is not possible to determine whether or in what ways the policies have made any difference in the real world of educational outcomes.

CRITICAL OVERVIEW

INSTITUTIONALIZATION OF EDUCATIONAL RESEARCH

The establishment and institutionalization of educational research in the English-speaking Caribbean is related to two principal factors, the creation and growth of the university and higher education, on the one hand, and the achievement of political independence and national sovereignty, on the other. In weighing the relative contribution of these two factors it would appear that university education has had the greater influence. To substantiate the validity of this inference, it is necessary to examine each of these factors separately.

University and Higher Education

The growth of educational research in the English-speaking Caribbean has paralleled the growth of university education. In examining the research capacity of the different Caribbean nations, those nations with university campuses -- Jamaica, Guyana, Trinidad, and Barbados -- have much more highly developed research institutions and support infrastructure than those Caribbean countries that are without university campuses. The stage of development of educational research in each of these Caribbean countries relates very much to the length of time that university education has been established in each territory. For example, the most highly developed and sophisticated educational-research infrastructure is in Jamaica because the University of the West Indies began at Mona, and for 10 years this was its sole campus. This was followed next by the establishment of the campus at St Augustine. The development of the University of Guyana and the Cave Hill campus were almost simultaneous. Belize and Bahamas have only recently attempted to establish higher-education institutions, the College of the Bahamas and the Belize College of Arts, Science and Technology (BELCAST). The smaller territories of the Windward and Leeward Islands have no campuses and, to date, have not been able to establish institutions comparable to the College of the Bahamas and BELCAST.

Educational research capacity and its stage of development are related to the establishment and evolution of higher education because research is seen as one of the distinctive features and cardinal operations of university and higher education. Research is part of the graduation requirements for higher degrees at the master's and doctoral levels. It is even sometimes included in the requirements at the bachelor's level. It is also part of the appointment and promotion criteria used by the university in selecting staff in the first instance and in their advancement through the university hierarchy. The consequence of these two sets of requirements is that both staff and students in the university are encouraged to pursue research. The rationale for these requirements is that research is one of the means by which knowledge is generated and scholarship developed and by which rational solutions can be developed for problems. The university should exist on the frontier -- pioneering innovations, challenging the status quo, finding solutions to problems, and generating new ideas -- thus transforming the society in which it exists. Accordingly, both staff and students should be channeled into research.

Where the University of the West Indies has been given the responsibility by Ministries of Education for guaranteeing standards in teacher education, research has also become a standard part of the teacher-training process. The School of Education in Mona, through the Joint Board of Teacher Education, is mandated to guarantee standards in teacher education in Jamaica, Bahamas, and Belize, where it is the certifying body in teacher education. Similarly, the School of Education at Cave Hill, through the Standing Conference on Teacher Education, is given a similar role with respect to Barbados and the Eastern Caribbean territories. The teachers' colleges in these 11 states include, within the teacher-training curriculum, an action-research study that final-year students must produce to satisfy the graduation requirements. In this exercise, students are expected to identify a classroom problem, do relevant reading of the research literature, and, through some empirical activities involving the collection, analysis, and assessment of data, attempt to solve this problem or to explain the situation. In Trinidad, where the School of Education at St Augustine has not been given a similar mandate in teacher education and where the Ministry of Education of Trinidad and Tobago is the certifying body, a similar requirement is not made of its teachers. Thus, where the university is the certifying body in teacher education, research is a part of the certification requirement whereas in the only instance in which it is not, a similar requirement is not made.

The fact that the largest number of institutional elements, research units, and support infrastructure in terms of libraries, documentation services, computer centres, and links to computer data bases are found in the universities of the region is also consistent with the fact that the university has been the major promoter of research in the English-speaking Caribbean. In this regard, educational research cannot be separated from research in general as the universities have attempted to establish the research process in all the various disciplines.

In preceding chapters, it has been noted that the vast majority of research projects in the Caribbean are small individual efforts. Most of the research in education has been done by master's and doctoral candidates in pursuit of their degrees. Much of the research has been basic, that is, unrelated to immediate operational outcomes, and the preoccupation has been with achieving internationally accepted standards in research. That many of the themes pursued have been unrelated to national issues and policies is substantially explained by the university setting in which the research is done: the resources of the university allocated to research are limited. In most instances, the best that the university can do is to provide the staff member with a salary and allow access to the support infrastructure and a protective climate in which to pursue the project with relative autonomy. By and large, little funding is available to finance specific projects.

Research grants go mainly to researchers in medicine, agriculture, natural sciences, and engineering. The number of grants to educational researchers are few and small. In the main, the educational researcher has no assistants or assistance and is limited to paper-and-pencil survey-type strategies, examination of documents, and interview procedures. The scope of operations is restricted to what he or she can manage within the context of his or her service commitments. When these limitations and restrictions are coupled with the personal-advancement motivation of the researcher, it is completely understandable that the projects only address national issues and policy concerns in an incidental and haphazard way. Thus, while the university has to be credited for establishing educational research in the Caribbean, it must also bear the responsibility for the major limitations of such research.

National Sovereignty and Political Independence

There is a strong social demand for education in the Caribbean and most governments tend to operate in a populist way. Accordingly, newly independent states accord education a very high priority and educational systems have all been expanded and the expenditure on education increased substantially. Research has been used to justify changes and the level of expenditure on education and to ensure the quality of the innovations and changes made within the educational system. It has been used to help develop particular strategies, especially in the area of curriculum. In some instances, it has been used to attack persistent problems. For these reasons, Ministries of Education throughout the Caribbean region have developed some capacity in educational research in terms of institutional arrangements and support infrastructure. In some countries, the Ministry of Education actually rivals the university as a base for educational research.

Probably the greatest contribution made by governments has been in focusing the emphasis of educational research. Governments have sponsored curriculum research in almost every Caribbean country as part of the process of decolonizing education in their countries. The aim has been to create curriculum that is indigenous in its content and nationalistic in outlook. Curriculum research is the largest single area of research effort in the region -- mainly through government support. In many instances, Ministries of Education have developed their own capacity in curriculum research and, in several instances, ministries have funded the universities in the region to provide research in this area. The concern of this type of research has been national identity and the curriculum has been perceived as a major means of achieving this. Research sponsored by Ministries of Education has largely been on a project basis and usually involved team work. This is to be contrasted with the more individualized orientation of university research.

In some instances, Ministries of Education have sponsored evaluations whereby particular practices or particular policies have been assessed within a setting. For example, the Government of Jamaica recently commissioned the University of the West Indies through the School of Education at Mona to conduct an evaluation of the shift system, which was implemented in 1974. The purpose of this evaluation was to assess the effectiveness of the shift system in solving educational problems that had been identified and to look at the kinds of problems that had been created by that system. Notwithstanding the fact that there are examples where ministries have commissioned such research, the usual pattern is for ministries to concentrate their effort on curriculum and examinations.

The model of government ministries attempting to establish national identity through curriculum research and development and universities attempting to set themselves up as communities of scholars pursuing basic research would explain about 95% of the educational research done in the Caribbean region. It would also explain almost all of the institutional capacity that has been established along with the support infrastructure.

Where international funding agencies have been engaged in research, almost invariably they have been engaged with either government ministries or the university. Thus, the efforts of such sponsoring organizations must be seen within the context of both government and university research. Also, university professors and master's and doctoral students from European and North American universities have come to do research in the Caribbean. However, they have worked either with the blessing of Ministries of Education or on attachments at the universities in the region and have had little impact on the local situation. The concept of private institutions engaged in educational research or of educational research independent of university or government ministries is still novel. The two examples of such operations in the Caribbean are so recent as to require a delay in judgment.

In summary, one could say that the major motivation for educational research in the Caribbean is personal advancement within the university setting and social demand and national identity as determined by governments. In many instances, governments do not have the capacity to carry out the research and thus contract the actual execution of the projects to the regional universities. Together, universities and governments account for nearly all the capacity and output, with the university being the greatest single resource.

THE INTELLECTUAL COMMUNITY

In examining the evolution of research, one is actually assessing the recent intellectual history of the Caribbean. During the colonial era, there was no organized intellectual community resident in the Caribbean. The intellectual centre was the metropol and new ideas, paradigms, and algorithms arose within that context. The colonial perceived himself as being one who needed to be aware of the latest ideas and to engage in the discussion of the merits and demerits of those ideas. Initiation, invention, and innovation arose from outside the society.

Both the university and national government stem from the same root. They are twin alleles of the same gene: independence. While national governments seek to provide the management of the new nations, the university attempts to provide the managers, technical experts, inventors, innovators, change agents, and intellectual leaders. These were the explicit goals stated for the university and national governments in the 1940s and 1950s. Governments should provide the means by which the Caribbean people determine their own destiny and the university the mechanism by which the personnel would be found to manage and lead the affairs of Caribbean people. The institutionalization of research in both the university and government is a direct response to the challenge of decolonization.

Within this context and concept the research community created in the Caribbean over the last 35 years should be in the vanguard of the process of creating the new Caribbean society and the new Caribbean people. However, although the creation of this research community --

largely composed of Caribbean intellectuals — is, in itself, an achievement in the short space of 35 years, it does not appear that the research community is far removed from a dependent status. Most of those doing research in education manifest the characteristics of the traditional mode of thought referred to earlier: the Caribbean is seen as being deficient within the context of Western norms and standards and the expressed destiny of the Caribbean resides in being able to catch up with these Western norms. As discussed in the chapter on the Caribbean context of educational research, this kind of mentality was conditioned by the colonial era and continues to exist as the predominant mode of thought within the research community.

From one point of view, the research community in the Caribbean could be perceived as an outpost of the Western intellectual community. Although most researchers have been trained in universities in the United Kingdom, Canada, and the United States and thus are themselves the direct product of the Western intellectual community, a growing number of scholars is being produced within the region itself from the universities, which also manifest similar tendencies. The designation of outpost stems from three characteristics:

. The Caribbean research community has imitated industrialized Western societies by borrowing the paradigms, methodologies, and theories developed in the West and simply adapting them to the local situation. This is found with respect to the use of tests, scales, research designs, and, in fact, all aspects of the research process.

. That the Caribbean research community seeks recognition from the international community is shown by attempts to publish research results in international journals. Again, the major objective is to produce world-class research that may, or may not, be related to the realities of life in the Caribbean. In many instances, the concerns and topics that are foremost in research are those that are current in the Western intellectual communities and not necessarily those that are relevant to life in the Caribbean.

. Research is inspired by Western ideas and the methodologies are imitated from the same source. However, the means to execute the research, which are available in the Western societies, are not present in the Caribbean. The easy access to data-processing facilities, to libraries with all the relevant materials, to documentation services that make primary-source materials available, to information networks that bring the latest findings to the researcher's fingertips, the ability to discuss current work with a significant number of colleagues are simply not present in the Caribbean. Thus, the researcher in the Caribbean perceives himself to be at great disadvantage in not having the necessary tools at his disposal to compete successfully with colleagues in the metropol.

In large measure, scholarship in the Caribbean has remained Western dependent. It has lacked originality, invention, and innovativeness. At best, in some instances, it has challenged the status quo in the Caribbean and has given new insight into problems that exist, but it still has to achieve the independence of outlook, the originality of conceptualization, and the inventiveness of new modes that were envisaged with the creation of the universities in the 1940s and with the move toward political independence of the same era, which began to bear fruit in the 1960s. It is necessary to note also that no theories have yet arisen from research in the Caribbean that fundamentally challenged Western notions about education in societies like the Caribbean. This is probably because the greatest efforts have gone into attempting to confirm, in the Caribbean setting, theories that have been worked out elsewhere.

Equally, progressive scholarship represents a neocolonial element, which is essentially an Eastern European framework of analysis imposed on Caribbean society. The derived solutions of a centrally planned society, democratic centralism, nationalized industry, and worker participation have all been conceived and implemented elsewhere, with the Caribbean people being asked to adopt and adapt Eastern European solutions to Caribbean problems. Little research in education has been done by scholars of this mode of thought whose intellectual activity has been, by and large, a Marxist analysis in the Caribbean context that differs from the traditional mode mainly in rejecting Western capitalist formulations and the colonial myths of the past. This approach, then, is new in the Caribbean even though it is not original. It is a rallying point of dissident intellectual opinion in the region. However, its highly doctrinaire prescriptions are unacceptable to a significant number of thinking persons even if they are uncomfortable with the traditional, colonial, pattern of thinking. Researchers with a nationalistic orientation are still in the minority.

It is, therefore, not unfair to say that, in large measure, the research community in the Caribbean still reflects the society it was designed to change. The very elements that were identified for transformation are still evident in the research community. Although the political situation may be different, when Caribbean society is judged from the research community, it is not far removed from being colonial in its inspiration and operation.

ISOLATION, IDENTITY, AND INTIMACY

One of the unique features of the Caribbean is that it is made up of 14 different countries that share a common history, language, and core culture. Because most of these countries are islands, their geographic circumstances dictate distinctiveness. Thus, although they can be included under the umbrella term Caribbean, every country is a distinct entity in itself. Each is geographically isolated from the other countries: Belize in Central America is surrounded by Spanish-speaking countries, Guyana in South America by Surinam, Brazil, and Venezuela, and the 12 islands by the Caribbean sea.

This isolation poses a problem for researchers. Within each of the five states where there is a research community, it is not organized because the researchers are by and large in different disciplines. They have greater contact with their colleagues within their disciplines in other countries than with their national colleagues in different disciplines. The number of persons available locally to discuss professional and intellectual matters in depth in one particular subject area is relatively small. Usually, the critical mass needed to trigger intellectual debate and dialogue is not reached in any single subject area. The absence of this critical mass in any single territory invariably leads to the researcher experiencing a sense of isolation. To have some kind of intellectual dialogue within his discipline, the researcher or his colleagues in other territories must invariably travel.

Because each country is distant from the other and seperated by natural geographic boundaries, each English-speaking Caribbean country has a distinct identity. Each country perceives its own uniqueness, individuality, and distinctiveness and seeks to preserve this under all circumstances: the regional Caribbean identity is secondary and subordinate to the national identity. At one and the same time, this presents both a richness in diversity as well as a difficulty in arriving at commonalities. The Caribbean researcher caught up in the identity concerns of his or her own country may have considerable difficulty in being able to perceive the similarity of his situation with that of other Caribbean colleagues. Because each Caribbean state is currently embroiled in the matter of establishing and maintaining its own distinctive identity within the context of an independent society, sometimes parochialism -- a narrowness of conceptualization and a limited perspective -- becomes manifest in the way in which issues are described, problems are perceived, and solutions postulated. Although the diversity of the Caribbean region is a very positive attribute, it has not been fully explored and exploited so far. Where a problem can be defined in regional terms in such a way that it overcomes the distinctive manifestation of the local setting, the generality of that formulation would probably allow it to stand the empirical tests in many other settings. In other words, in a large measure, the Caribbean may constitute the kind of microcosm in which it is possible to make inferences and generalizations that have wide validity. This potential is still to be developed.

The population of the Caribbean is about 5.6 million persons, ranging from 12 thousand in Montserrat to 2.2 million in Jamaica. Within these societies, the middle and upper classes are small and the intellectual community is a minute fraction of these classes. Thus, invariably, researchers within any one of the Caribbean nations are well known and probably intimately related to both the practitioners and policymakers within the educational system. This intimacy of association and relationship poses problems for objectivity. The researcher must continually contemplate the impact of the research on the community, not only in terms of confronting policymakers but, in many instances, confronting relatives and close associates. In one sense, it is an advantage as it gives the researcher easy access to the field in which he wishes to work. However, it is potentially dangerous in the dissemination of the findings, especially the terms in which those findings are couched.

The impact of this intimacy on research is mainly with respect to the topics and questions that the researcher chooses to investigate. In many instances, those that may challenge intimate relationships are left alone. Thus, one of the repercussions of this intimacy is that many relevant and real questions may be left uninvestigated. Such questions are probably best investigated by colleagues not resident in the particular country.

The considerations of isolation, identity, and intimacy establish the borders within which the Caribbean researcher must operate. They raise issues that researchers, policymakers, and interested parties must debate and discuss to examine the best ways to exploit the potential that these considerations constitute and, at the same time, overcome the obstacles that they represent.

FINANCING OF RESEARCH

At present, the core funding that supports research institutions in the Caribbean is almost totally indigenous. By core funding, I mean the source from which the salaries of researchers are paid and the operational expenses of the research unit met. All 22 research institutions in the English-speaking Caribbean at the moment are locally financed. Although the Carnegie Corporation helped to establish the research units in the University of Guyana and the Ford Foundation assisted in the establishment of the Institute of Education at the University of the West Indies, these units were funded by the universities after the financing from these corporations ceased.

From one point of view, this constitutes a healthy sign that these institutional elements will continue to exist. On the other hand, both the universities and governments provide little more than core funding for research. Project funding by governments has been largely for curriculum-development projects. A significant amount of project funding for research has come from international agencies and a large number of agencies have operated in the Caribbean in this role. With the current economic situation, which has implications for both governments and agencies, project funding is contracting significantly. From a financial and economic standpoint, it seems that educational research in the English-speaking Caribbean will go through a period of contraction in the 1980s compared with the activities in the 1960s and 1970s.

Although research institutions will have core funding and maintain research posts, they will have to develop ingenious means to carry out research. In addition, pressure will increase for researchers to carry out service functions within their organizations: that is, teaching, examinations, and monitoring functions as well as community services. It is most unlikely that institutions in most Caribbean states will allow researchers to pursue research without any involvement in service functions and it is not improbable that the point may be reached where the universities or governments will be forced to cut back their staff. If this stage is reached, it is probable that research will be among the first areas to receive the financial knife. It would seem that research faces relatively hard times and its tenure is precarious. Thus, some of the gains that were achieved during the 1960s and the 1970s may be lost in the 1980s if researchers are unable to develop survival strategies that will tide them over this period.

It is interesting that, when the research community is facing the challenge of taking a more independent line in thinking and a more original approach with respect to the Caribbean, it is also faced with serious economic difficulties. A first response would be to look to funding agencies to meet the shortfalls, but the agencies themselves are being cut back. There may still be some prospects for financing research because the Caribbean is an area of great interest, especially to North America as demonstrated by the Caribbean Basin Initiative that is now being discussed. This initiative is unlikely to provide funds for research, however, because it is geared to the private sector and is concerned with employment: educational concerns are excluded.

Probably the economic circumstances provide the kind of situation that may foster true independence. The intellectual dependence that has characterized the research community in education in the Caribbean may be related to past sources of training and financing. Probably, if the research community can find new and more indigenous ways and sources of circumventing the problems, it may become a more independent community in the future.

This is an appropriate point at which to discuss the role of international funding agencies in educational research in the Caribbean. International agencies, mainly the Ford Foundation, the Carnegie Corporation, and Unesco, have played an important part in building both educational research capacity as well as in generating research findings. However, both the core and project funding that have been provided by these agencies have been modest: funding has been in the thousands of dollars and not in the millions. Agencies that have made large loans or grants available to Caribbean nations -- the World Bank, CIDA, and USAID -- have not so far funded educational research to any significant degree. Probably of greater importance has been the recognition and status that foreign-agency financing has brought to the institution that they have funded.

Because of the region's colonial past, when a researcher or research institution receives a grant from a prestigious foreign agency, the status of that institution and that researcher immediately rises in the local community. It invariably means also that the researcher is brought into contact with international colleagues and, as well, is given access to facilities and resources not normally available in the local setting. From this point of view, foreign agencies have contributed substantially to the status and image of research in the region.

Invariably, agency grants have come with several constraints:

. Themes dictated by the policy of the agency have not necessarily been serious issues in the Caribbean;
. Grants have seldom been for longer than 2-3 years; and
. The amount made available is often out of kilter with the particular issue being addressed.

Caribbean researchers have frequently had to struggle to adjust their themes to the reality of the Caribbean situation within the commitment of the funding agency. The researcher is usually reluctant to cut off a source of funding although he might not be totally committed to the theme of the agency at the particular time: the theme dictated by the policy of the agency has within it the implicit assumption that the agency knows best. The program officers in the field seeking to identify and fund projects are already armed with a policy dictated by the board of the agency. They can do little to change that policy even though they might politely listen to reasons from the researcher as to why that particular strategy may not be as important or as urgent as it is perceived to be by the agency. Because of cross-purposes between researchers and agencies, researchers have developed a number of ingenious methods by which they accept funding under the particular theme but execute the project in such a way as to retain the integrity of their perceptions of the local situation.

A more serious constraint is the duration of funding. In most instances, research is conceived as being able to provide instant solutions to the problems within the local setting. Invariably, this means an underestimation of the problems being investigated and an overestimation of the speed with which those problems can be identified, interpreted, and resolved. The end result is that the funding period ends without appreciable progress being made in arriving at conclusions. A hastily written report is submitted that satisfies the agency but leaves the problem only a little closer to solution than when the project was first started. In some instances, agencies have ignored the state-of-the-art of research in a particular field and have put their efforts far in advance of the current knowledge in the region. The results of such efforts have proved wasteful.

Although agencies have made a contribution to the building of the research capacity and in producing research findings, several elements of the interrelationship are highly unsatisfactory and agencies, governments, and researchers in the region should together rethink the relationship for the future. It would seem that a principal part of the problem has been that agencies have generally conducted their discussions mainly with policymakers and managers in the ministries or universities -- at the level of minister, permanent secretary, chief education officer, vice-chancellor, or dean. The voice of the researcher is a relatively minor one within these discussions. This problem is compounded because there are no research associations and few research councils in the Caribbean. Thus, there are no organizations that seek to bring researchers together to define the issues before discussion with the funding agencies. Because of this absence of ongoing dialogue within the research community, there is ineffectiveness in the definition of projects and in the ways in which these should be conceived and operated.

A particular potential that needs to be explored in the Caribbean with respect to the financing of research is the commercial marketing of products of research and of the ability of Caribbean researchers to undertake many of the services that are being undertaken by colleagues from outside of the region. It is true that many of the results of local curriculum development have been used in textbooks that are now used in Caribbean schools, but much is still to be done in this area. The royalties from such exercises could be channeled to provide a source of financing for future research projects -- both agencies and governments should seriously consider this possibility. One such example is the Language Materials Workshop of the School of Education in Mona. This workshop was created as a result of the Ford Foundation grant to the Mona Project and the results of this have been the language-arts materials for Grades 1-3 in primary schools in Jamaica. Although a proportion of the royalties from these books are currently going to the Language Materials Workshop, the Ministry of Education in Jamaica could contribute its portion of the royalties for continued research.

Another possible source by which the research community could become more self-supporting and independent is by providing services with respect to evaluations, feasibility studies, sector surveys, and other such exercises that are usually related to the implementation of educational projects in the region. At the moment, agencies such as CIDA, USAID, and the World Bank invariably contract international agencies or universities within the First World to execute such activities. There are Caribbean nationals who are capable of providing these services. If Caribbean nationals, on their own or in cooperation with colleagues from outside of the region, were to execute these activities with a Caribbean institution as the contracting agency, it would be possible for the research community, in the universities especially, to generate funding that could be used for projects that neither governments nor international agencies are likely to support. It would provide a source of funding that would enable the research community itself to determine the projects that should be developed. This would require some reorganization within the research community where institutions in the different countries would make themselves available and flexible to undertake such assignments. It might also mean that institutions such as the research units of the various Schools of Education would actually have to go out and canvas agencies in this regard although this function could be carried out by a Caribbean educational research, review, and advisory group. A careful study of these markets must be made and the skills of the educational research community must be appropriately advertized to exploit the potential existing in this area.

The first steps in institutionalizing educational research in the Caribbean were to provide individuals with the appropriate training and to create the institutional structure and the necessary support infrastructure. Having created the nucleus of such an organization, the next step is for researchers and research institutions to generate some of their own financing.

It is interesting to note that, with the cutbacks that have taken place in Europe and North America, there is no shortage of consulting firms, universities, and agencies in the First World looking for contracts and jobs of a similar nature in the Third World. Because of their longer experience, these organizations are in a better position to exploit such potential in the Caribbean immediately. Also, because of the traditional external focus of this region to look outside of itself for expertise, these organizations may well be successful in obtaining contracts within the region. It remains to be seen whether the Caribbean educators and researchers are sufficiently motivated and perceptive to be able to utilize successfully the possibilities in their own setting.

RESEARCH AND POWER

The achievement of national sovereignty and political independence has, in a dramatic and immediate manner, transferred final authority in several areas of Caribbean life to politicians. Research, because it generates knowledge, understanding, and instruments, creates expertise on the one hand and authority on the other. The conduct of research in the Caribbean, in a slow and subtle way, has been creating local authority and expertise. In the colonial era, authority and expertise were external to Caribbean societies; persons exercising authority in the Caribbean did so in a representational capacity on behalf of some external source and expertise was habitually imported. Local political and technical authority and local decision-making and expertise are recent to the Caribbean and are faced with some resistance in acceptance by the people.

It is interesting to trace the ways in which political and technical power-brokers have interacted and responded to each other in the region over the last 30 years. In the first instance, in the 1950s and 1960s, politicians patronized local expertise but really took their advice from imported foreign experts -- they continued the colonial pattern. This was one way in which the politician legitimized his own decision-making in his quest to establish the reality of his new position in the society. This is not to underplay the fact that such local expertise as existed did not cover all the areas in which expertise was needed and, therefore, the resort to foreign sources was justified in several instances. However, it does emphasize the fact that such local expertise as was available was to a great extent ignored.

Anecdotes abound of foreign experts who came to the Caribbean, "picked the brains" of local technocrats, and wrote reports that were no different from positions previously taken by local personnel but which had been shelved by the political directorate. There are also numerous anecdotes of local advice being ignored by local politicians who chose instead expensive foreign advisors whose advice, although technically correct, was not appropriate when the nuances of the particular society were considered.

The next result of this treatment of local academics was that they sided with the opponents of the governments. The governing politicians alienated the local intelligentsia, especially the academics who included the researchers. The differences with the academics were based on the use of power by the newcomers to political power. The major grievances were with respect to personal slights and disregard of local expertise. However, when local academics became involved in opposition politics, they invariably couched their disaffection in ideological and populist terms. Government policies in a large number of areas were aggressively challenged. Where the policies could not be effectively faulted, the strategies and methods were vigorously criticized. Caribbean academics were highly visible among those confronting the "party in power" in the various Caribbean countries. This invariably brought the universities in the region into confrontation with the political directorate. The conflict that resulted has had many colourful and dramatic moments. In Jamaica, for example, several academics had their passports withdrawn, others came under secret-service surveillance, and the academic community in general was considered hostile by the government.

This situation was relieved by the changes of government that took place in several countries in the late 1960s or the early 1970s. The new governments invariably coopted several academics into their administrations as advisers in technical positions, ministers, or consultants: this could be interpreted as reward for solidarity during opposition. For the first time, local political power and local academic power were on the same side. The Caribbean university research community had the responsibility of participating in the decision-making machinery at the highest level.

The result of this development was a new confrontation: between the relatively young, highly qualified but inexperienced university academics and the older technocrats of the civil service who had been schooled through self-teaching on the job over many years. Each group was contemptuous of the other. The career civil servants perceived these new recruits as threats whereas the academics perceived the old-guard career civil servants as obstacles. For both sides, it was a new experience. The civil servants had developed strategies for the foreign experts brought out for a short period but local experts living in the society constituted a new phenomenon. The academics were unaccustomed to the corridors of power, naive concerning civil-service bureaucracy, and innocent to the ways of politicians and politics. The impact on decision-making, policy, and implementation of new programs by these academics largely depended on the personality of each academic and the position occupied. Those with line positions -- directors, permanent secretaries, or ministers -- were more effective than those occupying staff positions as consultants and advisers.

By the end of the 1970s and with the beginning of the 1980s, a new era seems to be emerging. It has a mixture of features of the past eras as well as some new characteristics. Politicians are again consulting foreign experts, but not exclusively and usually not in areas in which there is local expertise. Local experts from academia continue to be recruited into niches within the policymaking machinery, but greater weight is being attached to expertise than to ideological parity and party allegiance. On an increasing number of issues, local and foreign experts comprise a team or task force. Several academics have returned to the universities after serving a stint in government. Both the courses and the teaching of the universities should benefit from the practical insights that these academics can now apply to their theoretical formulations. Quite a number of Caribbean academics have been recruited by international agencies, including the World Bank, Inter-American Development Bank (IDB), United Nation agencies, and Unesco. Some Caribbean academics who have been trained in America or Europe and have worked in First-World institutions are showing an interest in the Caribbean and have been recruited by governments in various positions. The exact path of the future is not clear: the new situation is much more fluid and not as polarized as in the past; politicians are not short of advisers from numerous sources; and Caribbean academics now have greater access to both government advisory positions and international agencies.

Increasingly, the societies in the Caribbean are understanding and determining the ways in which political power should be exercised and the politicians are becoming more confident and skilful in the exercise of power. Local academics are becoming more knowledgeable about their society, which is also recognizing their expertise. With greater access to both national and international agencies, there is growing confidence and acceptance. Accordingly, as both groups have become better established in their respective provinces, the areas of cooperation, collaboration, and constructive interaction have increased.

In looking at the relationship between research and power, it must be realized that only some researchers have used their knowledge within a partisan political context. Invariably, such researchers have had some reason to confront the existing political directorate that is usually independent of their research. Although this has temporarily created hardships and difficulties for the persons concerned, in most situations to date, these researchers have realized some dividends at a later stage. This has been ensured by the fact that, to date, most governments have been changed in the various countries. The researcher who participates in the political fortunes of a particular party is rewarded when that party is in power and has to subsist when it is out of office.

On the whole, most researchers have operated outside a partisan context: they consciously avoid being identified with any party. By taking a neutral stance, they often avoid some of the more controversial and pressing issues of contemporary Caribbean society. On the other hand, such researchers increasingly find themselves being consulted by persons from all parts of the political spectrum. Increasingly, they are being perceived as professionals preoccupied with the concerns of their discipline without connections and interests in the spoils of partisan competition for power. Participation of these academics in the policymaking machinery has taken longer to develop but probably will be more enduring than the impact of their more partisan colleagues. From another point of view, it could be said that the political apparatus has developed strategies to coopt and neutralize the possible impact of academics as rivals in the competition for the wheels of power.

CONFIDENCE

In surveying educational researchers in the Caribbean, I observed that many of the researchers interviewed did not view themselves as researchers. Although they had been trained in research, were employed in institutions that required research, and in many instances had done research, the term "researcher" was reserved for somebody who had made significant discoveries and had a long history of successful projects. Accordingly, many individuals underestimated and undervalued their accomplishments and role. A significant number of such persons felt that they were not properly classified as researchers -- they did not regard themselves as such nor did they see the work that they had done of any great significance.

What this seems to emphasize is a lack of confidence on the part of several persons engaged in the research enterprise within the Caribbean. This lack of confidence relates to the fact that, in many instances, persons who are doing research have obtained master's degrees but not a doctorate. Another relates to the very exalted notion of research in the classic mould of increasing the boundaries of knowledge and adding to the store of human understanding. In such a context, "researcher" is synonymous with intellectual giants of the ages. Within that context, the Caribbean researchers with a master's degree attempting to understand how children learn to read or do mathematics at the early-childhood level regard their activity as part of the process of doing a good job but not necessarily of increasing understanding and knowledge. This appears to be one of the reasons that foreign expertise is brought into the Caribbean without much objection -- many of the persons within the region with existing knowledge do not perceive themselves as experts. In many instances, the persons who are brought in as experts are no better qualified, experienced, or knowledgeable about the particular phenomenon than their Caribbean colleagues. However, they have much greater confidence and assurance about their own role and their ability to give advice. Also, many university researchers felt that they had not achieved enough in terms of research. They were quite comfortable about their teaching abilities or service role in moderating standards in teachers' colleges, but they were unhappy about the amount of research they had been able to accomplish.

PROMISING FINDINGS

In the 30 years of educational research in the English-speaking Caribbean, have any findings been of sufficient generality to be worthy of further pursuit because of their potential for wider application? I believe that there are at least four areas for further work: language and linguistics, intervention strategies for malnourished children, mental health, and early-childhood education.

Language and Linguistics

One significant finding in the area of language and linguistics research is that, to teach children English successfully, the language teacher must begin with those structures in standard English that have a parallel in the Creole and then, at a later stage, move to those structures in standard English that have no counterpart in the Creole. As a more general statement, "the teacher must begin with the concepts that the children bring with them to school, which are rooted in the structures and conceptualization of the Creole, and then move to the more unfamiliar concepts." This is in keeping with the well known principle of classroom learning enunciated by Ausubel that the classroom teacher must begin with relevant anchoring ideas in the existing cognitive structure of the child and relate all new ideas to these existing structures.

The wider application of this general finding is that it is not restricted only to the teaching of English. It would appear that the teaching of science, mathematics, social studies, etc. should all be rooted essentially in the concepts codified in the Creole. In other words, the language of the child codifies not only his or her language learning but also mathematics, science, music, art, and social-studies learning. Probably, the persistently poor performances of students in the areas of science and mathematics in Caribbean societies is related to this fact. To a large extent, science and mathematics curricula have been restricted to concerns of mathematical and scientific concepts without necessarily relating them to the existing knowledge of the child, especially as this is codified within his native language. In other words, the rich resources of the child's mother tongue, in terms of the ways in which it has codified that child's conceptual understanding of the world, has not been sufficiently exploited by the teacher. So far, researchers have concentrated their efforts mainly on language learning, which is only one application of the more general principle. It is understandable why researchers, in the first instance, should concentrate their efforts on language learning. However, the extension of this logic to other subject areas is clear. My experience as a teacher of science at the high-school level is that the teaching of science can be greatly facilitated by tapping the conceptual understanding of the students and this is rooted in their first language.

Intervention Strategies for Malnourished Children

Another area with potential for wider application is in the development of intervention strategies to stimulate cognitive development in young children living in poor communities. This work has been spearheaded by Sally Grantham-McGregor of the Tropical Metabolism Research Unit of the Faculty of Medicine at the University of the West Indies in Mona.

In Jamaica and most other Caribbean countries, the growth and health of young children from lower socioeconomic backgrounds tend to be poor, due mainly to poverty. Families frequently live in overcrowded substandard housing, the parents' level of education is generally low, and unemployment is high.

In 1971, a pilot program was carried out involving mothers and their 3-year-old children (Grantham-McGregor and Desai 1975). The study comprised an index group of 20 children and a control group of 21 children. The index group was visited for 1 hour each week for 8 months by a trained nurse. Mothers were shown how to play and interact with their children in such a way as to promote good cognitive development. A toy and a book were demonstrated each week to the mothers and left in the homes. Both groups were assessed on the Griffiths Mental Development Scales before and after the 8-month intervention program. The index group made significant gains as compared to the control group.

After this first study, another (Grantham-McGregor et al. 1980) was done involving children who had been hospitalized for severe protein energy malnutrition (PEM). An attempt was made to develop, in this study, a more cost-effective model from that used in the pilot study. Accordingly, community health aides were used for home visits in place of a trained nurse. These are government-employed para-professionals who have completed primary education only and have had limited training in health and nutrition. They were trained to assist in clinics and to make home visits involving techniques of toy demonstration and developmental stimulation. Instead of either imported or locally produced commercial toys, a series of toys made from waste materials was designed and produced by the researcher and her assistants.

The study design included a control group of 21 adequately nourished children, who were hospitalized for reasons other than severe PEM, a malnourished group of 18 children who did not receive the home-intervention program, and a second malnourished group of 21 children who received a program of stimulation through home visits of the community health aides for 1 hour each week for 2 years and then 1 hour every 2 weeks for the next year. The focus of the intervention was similar to the previous project. The mothers were shown how to play with their children in ways that were likely to encourage optimal development.

All three groups were evaluated with the Griffiths Mental Development Scales at the time of hospitalization and at regular intervals thereafter. On admission to hospital, both malnourished groups had similar mean Developmental Quotients (DMs) and both groups were significantly below the control group. By the time the children left hospital, all groups had improved but the intervened group had improved the most. After discharge, the nonintervened-malnourished group showed no sign of reducing their deficit compared with the well nourished control group. In contrast, the intervened-malnourished group improved steadily and to such an extent that they caught up with the well nourished control group in 12 months and maintained that parity until the end of the intervention period at 36 months. It should be noted that the intervened children were not provided with any nutritional supplements. They remained behind the well nourished group in height, weight, and locomotion development. The gains made were with respect to cognitive functioning. This study does not rule out the possibility of brain damage by malnutrition but it does indicate the possibility of compensation by an intervention strategy.

A third study was designed to develop an approach that would prevent children in poor circumstances from demonstrating the well known drop off in development (Grantham-McGregor 1982). The intervention strategy consisted of a home-visiting model using community health aides based at a neighbourhood maternal- and child-health clinic. Developmental stimulation was added to the usual health and nutritional visiting services of the clinic. The field supervisor was a trained nurse. All children aged between 6 and 30 months in the neighbourhood of the clinic were included in the study. They were divided into two groups: one group (50 children) was visited monthly whereas the other group (52 children) was visited twice monthly. A control group of 50 children was selected from an adjoining neighbourhood of similar socioeconomic status. After this study had been in progress for 1 year, provisional figures showed that the control and monthly visited groups declined an average eight to nine Developmental Quotient points, whereas the twice-monthly visited group maintained their developmental level.

Grantham-McGregor followed one child's development from age 9 months, when he was in hospital with marasmus, for 6 years. From hospital, he was transferred to the vastly improved environment of a children's home and then later was adopted by a middle-class family. This child showed an improvement of 30 Developmental Quotient points after leaving hospital. He was compared with a group of 18 children in the nonintervened group who were in hospital with severe malnutrition at the same time as he was, and were tested at similar time intervals. Five years after leaving hospital, he was over two standard deviations above their mean score.

The directions pointed to by these studies seem very promising and hopeful. They seem to suggest that even children who have suffered from severe malnutrition, if exposed to permanently enriched environments, can show significant and remarkable improvement. They also seem to suggest that low-cost intervention strategies involving community personnel of modest education and the existing health-service infrastructure can be used to obtain meaningful results. When measured against the enormous wastage of human potential that takes place in Caribbean and Third World societies, these studies take on major significance and should be enthusiastically and vigorously pursued.

The National Nutrition Centre in Barbados has pursued interests similar to those of the Tropical Metabolism Unit but has concentrated on a different aspect of the problem (Ramsay 1979). It has pursued several studies involving children from birth to age 4 years, who have been admitted to hospital suffering from PEM, in studies with two main foci:

. Community health studies addressing the issue of continuity of care of malnourished children, and

. Longitudinal studies on the educational achievement of children who have suffered from malnutrition in their first 4 years of life.

An interesting finding from the community studies to date has been that a major difference between two sets of mothers, of the same socioeconomic circumstances, who have either malnourished children or well nourished children, resides in differences in feeding practices. Those following traditional patterns, established as part of plantation life during slavery, invariably had malnourished children whereas those mothers adopting more modern practices had well nourished children. Accordingly, a community nutrition-education program was developed. It was designed to persuade mothers following traditional patterns to change to the practices of the mothers of the well nourished children.

The findings to date of the studies on the educational achievement and school performance of children who had been successfully treated for PEM have been that these children, throughout their school life -- at the primary level -- have achieved less than their well nourished peers, and have tended to have more behavioural problems and show evidence of more learning disabilities.

It is interesting to note that, although the National Nutrition Centre's studies have induced continuity of care in the treatment of malnourishment, including nutritional supplements, they have not incorporated an educational or development-stimulation component. A possible inference is that successful treatment of PEM followed by adequate nutrition does not, by itself, reverse any damage to cognitive functioning done by moderate or severe PEM suffered in the first 4 years of life. The Tropical Metabolism Research Unit's studies addressed the cognitive and educational aspects of the problem directly through a stimulation program without a nutritional supplement component. The success of the Tropical Metabolism Research Unit's studies to at least compensate for damage done is highlighted when contrasted with the National Nutrition Centre's studies.

The potential for further research would be to examine the effect of including both nutritional-supplement and development-stimulation components in the treatment of PEM children after their condition has been cured.

Mental Health

The Caribbean Institute for Mental Retardation has been working along similar lines to the Tropical Metabolism Research Unit and the National Nutrition Centre but with a different focus. Their concern has not been PEM effects but the early detection of developmental disabilities of whatever kind without regard for their causal factors. Having detected the disability, the direction of the research has been to develop a low-cost stimulation delivery program to minimize the educational manifestation of the disability.

The program has involved the training of low socioeconomic-status mothers to deal with the disabilities of their children and to teach other mothers to do the same. The pattern of the program developed in two sites -- Kingston and Spanish Town -- has been that professional staff train one set of mothers having children with diagnosed disabilities to execute a program of early stimulation with their children. In addition, they are taught skills that would enable them to teach other mothers to execute the stimulation program.

To date, the program has been highly successful in training mothers from low socioeconomic groups to effectively stimulate their children, effectively using mothers to train other mothers, and keeping the cost of this operation very low. One of the problems that has emerged, however, has been that, although the mothers have been given professional advice to assist and help their children before they reach school age, when the children are enrolled in the formal system new problems arise because programs and provisions for children with disabilities are not available in the normal primary school. Invariably, parents come back to the Caribbean Institute for Mental Retardation for assistance. This highlights the need for continuity of care of such children extending through their school years.

Early-Childhood Education

The project for early-childhood education, sponsored by the Bernard Van Leer Foundation, under the leadership and direction of D.R.B. Grant, succeeded whereas Head Start in the United States failed to obtain similar results. This may reflect some of the differences between developed and underdeveloped societies in that the school in the latter can compensate for deficiencies in ways that it cannot in the former.

The important finding from this project was that the differential in educational achievement between children from low- and middle-income homes was arrested in project schools whereas it continued to widen among children in the nonproject or control schools. In other words, the quality of education offered in the project schools in some ways compensated for the deficiency of the homes. Although it cannot make up for the gap between the children that existed on entry to the program, it prevented it from growing wider.

Conclusion

One of the interesting features of the research projects and findings discussed is their interrelatedness. The studies of the Tropical Metabolism Research Unit have been developing means of ameliorating the cognitive effects of malnutrition in the first 4 years of life. The National Nutrition Centre has been developing programs to ensure continuity of care of the malnourished children to reduce the recurrence of the condition. The Caribbean Institute for Mental Retardation has been seeking to identify and diagnose developmental disabilities whatever the cause and minimize the long-term effect by early intervention. The project for early-childhood education has been concerned with providing education of quality for poor children using the grass-roots personnel and institutions that exist. The linguistic research project has concentrated on developing a language-learning program for Creole-speaking children. These projects have all been focused on problems related to the education of children of the poor. They have dealt with different aspects and probed different concerns. Each has made its unique contribution.

Has the stage now been reached for an integrated multidisciplinary approach to the education of parents and children, from birth to 6 years, in poor communities in the Caribbean? Sufficient knowledge has been generated to make such a project possible and feasible. If there is any place to break the vicious cycle of human wastage caused by poverty, it is in these early years. The problem, even if it is possible to mount such a project that will yield substantial answers and approaches, is the time it will take to implement this project within the routines of the different health, education, and community programs currently in operation, in addition to those that may come on stream in the interim. In all probability, we are talking about action in the 21st century.

Another concern is the difference in results between small projects closely supervised and tightly controlled by well educated persons, who are deeply committed to their work and consequently highly motivated and enthusiastic, and mass programs operated by less educated persons, who are not closely supervised, and are working within the context of a regular routine for what is generally considered inadequate pay. Probably, the desired outcome will not be achieved under these conditions before the end of the 21st century.

For people and societies anxious to solve problems and develop, this may be an exceedingly long time. In the context of the past history of the Caribbean and the human race in general, however, this is par for the course.

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ACRONYMS AND ABBREVIATIONS

A-level	Advanced level examination
BELCAST	Belize College of Arts, Science, and Technology
CARE	Child Assessment and Research in Education Centre
CARICOM	Caribbean Community
CARIRI	Caribbean Industrial Research Institute
CARISPLAN	Caribbean Information System for Economic and Social Planning
CARSEA	Caribbean Association of Educational Administrators
CDB	Caribbean Development Bank
CE	Common Entrance examination
CEDO	Centre for Educational Development Overseas
CFNI	Caribbean Food and Nutrition Institute
CFTC	Commonwealth Fund for Technical Cooperation
CIDA	Canadian International Development Agency
CXC	Caribbean Examinations Council
DOERS	Development Output Evaluation Research Service
ECLA	Economic Commission for Latin America
ENDA	Environment and Development in Africa
ERIC	Educational Resources Information Center
GCE	General Certificate of Education
IDB	Inter-American Development Bank
IDRC	International Development Research Centre
IDS	Institute of Development Studies
ILO	International Labour Organization
ISER	Institute of Social and Economic Research
LDC	Less-developed country
NACOLADS	National Council on Libraries, Archives and Documentation Services
OAS	Organization of American States
OISE	Ontario Institute for Studies in Education
O-level	Ordinary level examination
OXFAM	Oxford Committee for Famine Relief
PAHO	Pan American Health Organization
PEM	Protein energy malnutrition
RRAG	Research Review and Advisory Group
SAREC	Swedish Agency for Research Cooperation with Developing Countries
SECIN	Social and Economic Information Network
SPSS	Statistical Package for Social Scientists
SSC	Secondary School Certificate
STIN	Science and Technology Information Network
TRININTEL	Telecommunications Corporation of Trinidad and Tobago
UNDP	United Nations Development Programme
Unesco	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations Children's Fund
UNIDO	United Nations Industrial Development Organization
UNITAR	United Nations Institute for Training and Research
USAID	United States Agency for International Development
UWI	University of the West Indies
WISCIP	West Indies Science-Curriculum Improvement Project